

Introduction

1.1 Introduction

This Environmental Assessment/Draft Environmental Impact Report (EA/DEIR) for the Indian Creek Rehabilitation Site: Trinity River Mile 93.7 to 96.5 addresses the environmental issues, alternatives, and impacts associated with proposed activities intended to modify the bed and banks of the Trinity River upstream of Douglas City (Proposed Action). These activities, including channel rehabilitation measures, are required for the restoration of Trinity River mainstem fisheries. The Proposed Action is specifically designed to benefit anadromous fish and their habitat by developing a properly functioning and diverse floodplain and main river channel habitat. The Indian Creek site is associated with alluvial features along a 2.8-mile reach of the Trinity River beginning at its confluence with Weaver Creek and extending upstream of its confluence with Indian Creek in the general vicinity of Douglas City, Trinity County, California.

The U.S. Bureau of Reclamation (Reclamation) and the Trinity County Planning Department (Trinity County) have prepared this EA/DEIR in cooperation with the U.S. Bureau of Land Management (BLM). This document meets the legal requirements of the National Environmental Policy Act (NEPA) (42 United States Code [USC], Section 4321 et seq.) and the California Environmental Quality Act (CEQA) (California Public Resources Code, Section 21000 et seq.).

Reclamation will be responsible for the construction of the Proposed Action and will function as the federal lead agency for NEPA and federal Endangered Species Act requirements. Trinity County will function as the state lead agency under CEQA. Because of its extensive experience and land holdings along the Trinity River below Lewiston, the BLM will perform the duties of a NEPA cooperating agency for the project. As a cooperating agency, BLM assisted in the preparation of this EA/DEIR; as the manager of the Wild and Scenic Corridor established for the designated reach of the Trinity River, BLM analyzed potential impacts to the Outstandingly Remarkable Values (ORVs) for which the Trinity River was designated under the federal Wild and Scenic River Act.

This document discloses relevant information concerning the Proposed Action and invites all interested parties to play a role in both the decision-making process and the implementation of the decision. This EA/DEIR also provides federal, state, and local decision makers with detailed information concerning the potentially significant environmental, social, economic, cultural, and other impacts associated with the Proposed Action and the alternatives to the Proposed Action.

The Record of Decision (ROD) for the Trinity River Mainstem Fishery Restoration Final Environmental Impact Statement/Environmental Impact Report (FEIS/EIR), dated December 19, 2000, directed Department of the Interior (DOI) agencies to implement the Flow Evaluation Alternative, which was identified as the Preferred Alternative in the FEIS/EIR. In addition to the Flow Evaluation Alternative, elements of the Mechanical Restoration Alternative were included in the decision (U.S. Department of

Interior 2000). The ROD set forth prescribed Trinity River flows for five water-year types: extremely wet (815,200 acre-feet annually [afa]); wet (701,000 afa); normal (646,900 afa); dry (452,600 afa); and critically dry (368,600 afa). After the ROD was issued, a series of legal challenges was made in federal court; ultimately, the ROD was upheld by the United States Court of Appeals for the Ninth Circuit.

Although Trinity County was the lead agency under CEQA for the FEIS/EIR, the Trinity County Board of Supervisors chose not to “certify” the EIR portion of the joint NEPA/CEQA document because of the litigation in federal court. Therefore, the EIR portion of this document cannot be “tiered” from the FEIS/EIR. The EIR portion functions as a stand-alone document and is in no way dependent for its legal adequacy—for CEQA purposes only—on the FEIS/EIR. Additional information on the legal challenges and ultimate outcome are incorporated by reference from the Hocker Flat Rehabilitation Site: Trinity River Mile 78 to 79.1 EA/EIR (U.S. Bureau of Reclamation 2004).

Based on the outcome of the litigation in federal court, the flows authorized by the 2000 ROD are deemed to constitute the “existing [hydrological] environment” for CEQA purposes, and are considered the basis for the environmental analysis of the Proposed Action under both NEPA and CEQA.

Copies of all of the above-referenced documents, as well as the December 19, 2000 ROD, and the documents that, taken together, constitute the FEIS/EIR, are available for public review at:

Trinity River Restoration Program Office
United States Department of the Interior – Bureau of Reclamation
P.O. Box 1300
1313 South Main Street
Weaverville, California 96093

The decision to prepare a stand-alone EIR in the absence of a certified EIR for the Trinity River Mainstem Fishery Restoration Program is consistent with the CEQA Guidelines. Consistent with the ROD, Reclamation, in cooperation with other federal agencies, is required to proceed with all of the measures outlined in the FEIS. Trinity County considers that there is a need for the Proposed Action based on this federal policy and the County’s role in satisfying state and local requirements under CEQA. Trinity County’s role extends beyond the CEQA responsibility to ensure that state and local permitting requirements are satisfied and that the EIR portion of this NEPA/CEQA document is legally adequate for use by Trinity County and the other state and local agencies responsible for CEQA compliance. Notably, Trinity County lacks the power or authority to alter the overall Flow Decision and the subsequent decision to facilitate mechanical channel rehabilitation projects to accommodate federal agencies acting pursuant to the December 2000 ROD.

Trinity County’s role as the CEQA lead agency stems from its role as a funding entity for the Proposed Action. Grants from the U.S. Environmental Protection Agency (EPA) and the California Department of Fish and Game (CDFG) have been obtained for project implementation. Trinity County also acts as Floodplain Administrator for the Trinity River within Trinity County, pursuant to the NFIP.

Error! Main Document Only.

The Proposed Action has independent utility for Trinity County because of its role as the Floodplain Administrator for Trinity County's Flood Insurance Program. Several of the homes and properties within the project boundary were flooded during the 1997 New Year's flood. Any reduction in floodwater elevations will have a positive effect on the private lands within the project boundary, thereby reducing the need for future disaster relief or emergency services. Maintaining these properties in private ownership and at full assessed value will continue to provide Trinity County and its schools with property tax revenues.

1.2 Project History and Background

Completion of the Trinity and Lewiston Dams in 1964 blocked migratory fish access to habitat upstream of Lewiston Dam, eliminated sediment transport from over 700 square miles of the upper watershed, and restricted anadromous fish populations to the remaining habitat below Lewiston Dam. Trans-basin diversions from Lewiston Lake to the Sacramento River altered the hydrologic regime of the Trinity River, resulting in riparian encroachment and fossilization of point bars and riparian berms from Lewiston to near the North Fork Trinity River. Encroachment of riparian vegetation into the former active channel promoted the deposition of fine-textured sediments, resulting in the formation of linear berms that further confined and simplified the channel, reduced the diversity of riparian age classes and riparian vegetation species, impaired floodplain access, and adversely affected fish habitat.

In 1981, in response to these adverse impacts on fish habitat and subsequent declines in salmon runs, the Secretary of the Interior directed the U.S. Fish and Wildlife Service (USFWS) to initiate a 12-year flow study to determine the effectiveness of flow restoration and other mitigation measures for impacts of the Trinity River Diversion (TRD). Then, in 1984, Congress enacted the Trinity River Fish and Wildlife Program to further promote and support management and fishery restoration actions in the Trinity River basin. Under this program, nine pilot bank rehabilitation projects between Lewiston Dam and the North Fork Trinity River were implemented between 1991 and 1993, among other actions.

In 1992, Congress enacted the Central Valley Project Improvement Act (CVPIA). One purpose of the CVPIA (Section 3406) was to protect, restore, and enhance fish, wildlife, and associated habitats in the Trinity River basin. The act also directed the Secretary to finish the 12-year Trinity River Flow Evaluation Study (TRFES) and to develop recommendations "regarding permanent instream fishery flow requirements, Trinity River Division operating criteria, and procedures for the restoration and maintenance of the Trinity River fishery." The Trinity River Flow Evaluation Final Report was ultimately published in 1999 by the USFWS and the Hoopa Valley Tribe (HVT), providing a framework for restoration activities below Lewiston Dam.

In 1994, the USFWS as the NEPA lead agency and Trinity County as the CEQA lead agency began the public process for developing the Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Trinity River Mainstem Fishery Restoration Program. The FEIS, published in October 2000, functions as a project-level NEPA document for policy decisions associated with managing Trinity River flows and as a programmatic NEPA document providing first-tier review of other potential actions, including the Proposed Action. As noted previously, the fact that the EIR portion of the FEIS/EIR for the Trinity River Mainstem Fishery Restoration Program was never certified precludes the

ability to use it as a “first tier” CEQA document. For this reason, this EIR is intended to function as a complete, stand-alone CEQA document not dependent on any prior CEQA document for addressing impacts that must be analyzed under CEQA.

In conjunction with the planning and implementation of the Indian Creek project, the TRRP has issued an EA/Final EIR for the Canyon Creek Suite of Rehabilitation Sites, located downstream of Junction City. Similar to Indian Creek, the Canyon Creek project is intended to provide juvenile fish habitat between Canyon Creek and the North Fork Trinity River, while reducing flow impacts during ROD flows. Meanwhile, design options and implementation of other proposed Trinity River restoration components, including coarse sediment/spawning gravel supplementation, infrastructure improvement projects to protect private and public property from damage by ROD flows, and watershed improvement projects, are proceeding. Since these projects may occur simultaneously, the TRRP is making a concerted effort to ensure that the models, data, assumptions, and analyses for these projects are consistent with direction provided by the Trinity Management Council (TMC).

Numerous other watershed restoration projects are being planned and implemented throughout the Trinity River basin. The Yurok Tribe and the Trinity County Resource Conservation District (TCRCD) are implementing projects within the Lower Klamath River and South Fork Trinity River, respectively, with funding provided by CDFG’s Coastal Salmon Recovery Program and the EPA’s Targeted Watershed Grant Program; both programs are also a funding source for the Indian Creek Rehabilitation Project, with Trinity County working as a partner with the Yurok Tribe and the TCRCD under the EPA program to achieve basin-wide restoration goals. BLM, the Shasta-Trinity National Forest (STNF), the State Water Resources Control Board (State Water Board), the U.S. Department of Agriculture/Natural Resources Conservation Service (NRCS), BLM’s Jobs in the Woods Program, and the National Fish and Wildlife Foundation are also funding and/or implementing numerous upslope watershed restoration projects throughout the basin, including the South Fork Trinity River watershed.

Trinity County, working through the Five Counties Salmonid Conservation Program (5C Program), has inventoried all county road crossings of fish-bearing streams in the Trinity River basin with grant funding provided by CDFG and the State Water Board, and is currently implementing the highest ranked migration barrier removal projects. The 5C Program has also completed a sediment source inventory on county roads and is prioritizing and implementing projects to reduce road-related sediment sources. A sediment reduction project in the Indian Creek watershed involving 9.5 miles of Indian Creek Road will be implemented by the 5C Program with funding provided by CDFG concurrent with the Proposed Action. Another project, located on Browns Mountain Road north of the Indian Creek site within the Weaver Creek and Trinity House Gulch watersheds, will also be implemented by the 5C Program with funding provided by the TRRP, Federal Emergency Management Agency (FEMA), and the Trinity County Transportation Department concurrent with the Proposed Action. BLM has completed a similar inventory of its roads in the Trinity River watershed. As needed, road rehabilitation projects will occur based on these inventories. Currently, the Shasta-Trinity National Forest (STNF) is planning and/or implementing timber management, fuels reduction, and watershed improvement projects in the Weaver Creek and Rush Creek watersheds. NEPA and CEQA review is being provided on a project-by-project basis by the appropriate agencies. State, regional, or local entities could be the CEQA lead agency for

Error! Main Document Only.

those projects. In general, the USFS acts as the NEPA lead agency for projects on National Forest lands, and BLM acts as the NEPA lead agency for projects on BLM lands.

1.3 Trinity River Restoration Program

The purpose of the TRRP is to restore anadromous fish populations of the Trinity River. The ROD (U.S. Department of Interior 2000) outlined six specific and integral components of the TRRP:

- implementation of a variable annual flow regime according to recommendations provided in the Trinity River Flow Evaluation Study (TRFES);
- mechanical channel rehabilitation;
- fine and coarse sediment management;
- watershed restoration;
- infrastructure improvement; and
- adaptive environmental assessment and management.

The Proposed Action will be the fourth project developed under the mechanical channel rehabilitation component of the TRRP (the Hocker Flat Rehabilitation Site, Canyon Creek Suite of Rehabilitation Sites, and the Hatchery Coarse Sediment Injection and Channel Rehabilitation projects have all preceded this project). The Proposed Action will also be the third major project developed under the infrastructure improvement component (the Trinity River Bridges Project and the removal of a small house within the boundary of the Indian Creek project site occurred prior to this project).

The objective of the TRRP is to create a smaller, dynamic alluvial channel that exhibits the characteristics of the pre-dam river but at a smaller scale. This approach is intended to implement Trinity River restoration goals while ensuring that the power and flood control objectives of the TRD are maintained.

An integral part of the TRRP is the implementation of an Adaptive Environmental Assessment and Management (AEAM) Program. As described in the FEIS, an AEAM process is important for management of complex physical and biological systems, such as the Trinity River. The TRRP office has been established in Weaverville, California, to ensure that these components are implemented in a coordinated fashion in conjunction with the numerous agencies, Tribes, and stakeholders involved. Specific activities of the TRRP include project development, implementation, and monitoring activities throughout the Trinity River basin.

The AEAM Program is a formal, systematic, and rigorous program of learning from the outcomes of management actions, accommodating changes, and rapidly improving management actions. The Proposed Action has been developed in a manner compatible with the AEAM Program elements. These elements include the following:

- define measurable goals and objectives;
- develop testable hypotheses of how to achieve the goals and objectives through management actions;
- predict river response to management actions before implementing these actions;
- re-evaluate objectives, refine hypotheses, improve models, and improve management; and
- continually self-examine AEAM science and management via external peer review.

To date, the TRRP has prioritized several groups of rehabilitation projects that could be implemented in the next several years to meet ROD requirements for mechanical channel rehabilitation and that are consistent with the overall goals and objectives. Planning efforts have been initiated for two reaches, the Lewiston/Dark Gulch reach upstream of Douglas City and the reach between Douglas City and Junction City. The TRRP staff is involved in the planning and development of these Trinity River mainstem projects, with support from members of the TMC.

1.3.1 CHANNEL REHABILITATION ACTIVITIES

Mechanical rehabilitation activities were proposed for the mainstem Trinity River from Lewiston Dam to the North Fork Trinity River confluence. The overall intent of these activities is to selectively remove fossilized berms (berms that have been anchored by extensive woody vegetation root systems and consolidated sand deposits); revegetate and provide conditions for regrowth/sustenance of native riparian vegetation; and recreate alternate point bars and complex fish habitat similar in form to those that existed prior to the construction of the TRD.

The FEIS identified 44 potential channel rehabilitation sites and three potential side-channel sites for consideration by the TRRP. Site selection was based on identifying locations where channel morphology, sediment supply, and high-flow hydraulics would encourage a dynamic alluvial channel. The ability to access and conduct rehabilitation activities on private property was also considered in the selection process. The site boundary developed for the project encompasses portions of two of the channel rehabilitation sites (Nos. 19 and 20) and one side channel (No. 3) identified in the FEIS. A systematic detailed evaluation of the river identified 104 specific restoration sites (alpha descriptor) that offered rehabilitation opportunities. Eight of these sites are included within the site boundary used to define the Proposed Action. These sites are Au, Av, Aw, Ax, Ay, Az, Ba, and BBl.

1.4 Type of Environmental Document

This document is designed to comply with both NEPA and CEQA. NEPA and CEQA require that governmental agencies evaluate the environmental impacts of their proposed actions before making formal commitments to carry them out and that the public be involved in the evaluations. NEPA is a federal law that applies to federal agencies, whereas CEQA is a California law that applies to state and local agencies. For this project, NEPA requires preparation of an EA and CEQA requires preparation of an EIR. By preparing a single document that complies with both statutes, the involved agencies have been able to avoid unnecessary duplication of effort.

Error! Main Document Only.

The CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR has been prepared to function as a project EIR, pursuant to Public Resources Code Section 21156. A project EIR evaluates the environmental impacts of a specific project (CEQA Guidelines, Section 15161). This type of EIR focuses primarily on the changes in the environment that would occur because of project implementation and evaluates all phases of a particular project (i.e., planning, construction, and operation). For the reasons set forth previously, the “tiering” process is unavailable for the Proposed Action for purposes of CEQA, although it is available for purposes of NEPA.

1.5 Similarities and Differences between NEPA and CEQA

Although there are similarities between CEQA and NEPA, the two acts are not identical. For example, NEPA is a procedural law requiring agencies to evaluate a range of reasonable alternatives, disclose potential impacts, and identify feasible mitigation. CEQA, in contrast, is partly “substantive” in that it requires an agency to adopt “feasible” mitigation measures for any “significant effect on the environment.” In an EIS (a NEPA document), as opposed to an EIR (a CEQA document), reasonable alternatives must be rigorously and objectively evaluated at a greater level of detail. The threshold for preparing an EIR is lower than the threshold for preparing an EIS under NEPA. It is therefore not uncommon to have a joint NEPA/CEQA document that is not an EIS/EIR but rather an EA/EIR. This document is an example of an EA/EIR. It has been prepared because Trinity County, as the CEQA lead agency, determined that the level of controversy surrounding the Proposed Action is sufficient to trigger the need to prepare an EIR under the low-threshold CEQA standard. The federal lead agency, however, does not believe that an EIS is required under the higher NEPA threshold. This EA tiers off the October 2000 programmatic FEIS. Even so, the EA shares many attributes of an EIS, particularly the detailed analysis of alternatives.

Because of the obligation under CEQA to mitigate “significant effects on the environment” when feasible, the characterization of impacts as being either “significant” or “less than significant” is very important under CEQA. For this reason, this EA/EIR has been written in a manner that identifies, for CEQA purposes, “significance thresholds” for anticipated impacts. Some of these thresholds even have the force of law under CEQA. For example, CEQA Guidelines Section 15065 requires a “mandatory finding of significance” when a project “has the potential to substantially reduce the number or restrict the range of an endangered, rare or threatened species” listed under either the federal Endangered Species Act (ESA) (16 USC Section 1531 et seq.) or the California Endangered Species Act (CESA) (California Fish & Game Code, Section 2050 et seq.). No such obligation exists under NEPA. CEQA thresholds of significance for other issue areas and resources were developed using applicable regulations when they exist, or best professional judgment.

CEQA requires that this EA/DEIR propose mitigation measures for each significant impact of the Proposed Action subject to the approval of an agency governed by California law, even when the mitigation measure cannot be adopted by the “lead agency” (i.e., Trinity County), but can only be imposed by another responsible agency.

CEQA and NEPA sometimes use different terms for similar concepts. For example, CEQA uses the term “proposed project” while NEPA uses the term “proposed action.” For readability, this document uses “proposed action,” except when the context requires CEQA terminology.

1.5.1 NEPA/CEQA PROCESS

This EA/DEIR has been prepared so that Reclamation, as the lead agency under NEPA, and Trinity County, as the lead agency under CEQA, may respectively meet the requirements of each act. This document is intended to function as a joint environmental document in accordance with 40 Code of Federal Regulations (CFR) Part 1506.2 of the federal Council on Environmental Quality NEPA Regulations and Section 15170 of the CEQA Guidelines. The EA/DEIR provides a description of the conceptual design alternatives for the Proposed Action, as well as a comprehensive environmental analysis of the site-specific impacts associated with project implementation.

The EA/DEIR is being circulated to responsible public resource agencies, permitting agencies, trustee agencies, the State Clearinghouse, and interested stakeholders. Written and oral comments received in response to the EA/DEIR will be addressed in a final document that is anticipated to be a Finding of No Significant Impacts/Final Environmental Impact Report (FONSI/FEIR).

CEQA requires preparation of an EIR when the lead agency makes a determination that there is substantial evidence that the Proposed Action may have a significant effect on the environment. Trinity County determined that an EIR should be prepared for this project because preliminary analysis by Trinity County staff identified the possibility of potentially significant environmental impacts as well as the potential for significant controversy, as defined in the CEQA Guidelines (California Code of Regulations [CCR] Title 14, Section 15000 et seq.).

Trinity County Planning Department staff will review the oral and written comments on the EA/DEIR and respond to them in the final document. The department will then make a recommendation to the Trinity County Board of Supervisors on whether to certify the final EIR portion of the EA/EIR under CEQA. The Trinity County Planning Commission will also make a recommendation to the Board of Supervisors. If the Board of Supervisors chooses to certify the EIR, it must first adopt “CEQA Findings” addressing whether each potentially significant impact of the Proposed Action has been mitigated either through mitigation measures or through provisions in the alternatives (CEQA Guidelines, Section 15091, subdivision (a)). If, after adopting such findings, Trinity County is still faced with unmitigated significant impacts or does not have control over the mitigation measures necessary to mitigate certain impacts, it must also adopt a “statement of overriding considerations” before it can approve the proposed project. That statement must set forth the economic, social, or other benefits of the project that it believes outweigh its unmitigable significant environmental impacts (CEQA Guidelines, Section 15093).

CEQA requires that, in order to commence the 30-day statute of limitations for any legal challenge to an EIR, the lead agency file a Notice of Determination (NOD) with the County Clerk in the county where the project will occur and with the State Office of Planning and Research (when State agency approvals are required) which informs the public which project from the EIR has been adopted. Filing of the NOD will complete the environmental review process for the CEQA lead agency. Trinity County will then forward

Error! Main Document Only.

this documentation to the NEPA lead agency, along with its recommendation regarding the preferred alternative.

The EA portion of this document has been prepared under NEPA in order to determine whether the Proposed Action will constitute a major federal action that would significantly affect the human environment. The term “significant” as used under NEPA requires consideration of both context and intensity (40 CFR 1508.27). To aid in this significance determination, Reclamation has determined that the affected region is the Trinity River basin, and the locale for the channel rehabilitation component of the ROD is the 40-mile reach of the mainstem Trinity River below Lewiston Dam. Chapter 3 of this document discusses the intensity (i.e., severity of impact) for each resource element.

If the analysis provided in the EA supports the finding that the Proposed Action would have no significant adverse effect on the environment, a FONSI will be prepared. However, if the EA finds that the Proposed Action would result in a significant effect on the environment, an EIS will be required. At present, Reclamation, based on the analysis set forth in this document, believes that a FONSI will be appropriate and that an EIS will not be required. That determination is subject to change, however, after receipt and consideration of comments provided during the public comment period. In other words, the appropriateness of a FONSI cannot be definitively determined absent a review of information generated through public review. The NEPA process will be complete with the federal lead agency’s adoption of a FONSI, unless, through public review or the receipt of other information not presently available, the NEPA lead agency decides that preparation of an EIS is required. A draft FONSI is included in the front of this EA/DEIR.

1.5.2 MITIGATION AND MONITORING PROGRAM

There are no NEPA statutes or regulations that explicitly require that all significant project impacts be avoided or mitigated to a less-than-significant level, or that any adopted mitigation measures developed as part of an EA be “monitored” to ensure that they are carried out. California Public Resources Code section 21081.6(a), subdivision (a), however, requires lead agencies under CEQA to “adopt a reporting and mitigation monitoring program ... in order to mitigate or avoid significant effects on the environment.”

Throughout this EA/DEIR, mitigation measures are clearly identified and presented in language that will facilitate establishment of a monitoring and reporting program. Any mitigation measures adopted by Trinity County as conditions of project approval will be included in a Mitigation Monitoring and Reporting Program (MMRP) to verify compliance. The Draft MMRP is included as Appendix A, and the Final MMRP will be included as an appendix to the EA/Final EIR (FEIR). The approval of such a program will be part of any action taken by Trinity County with respect to the Proposed Action. When other state, regional, or local agencies subject to CEQA approve portions of the Proposed Action under their jurisdiction or regulatory power, these “responsible agencies” will be required to adopt their own MMRPs (*CEQA Guidelines*, Section 15097, subd. (d)).

1.6 Scoping and Public Involvement

During the initial stages of project planning, Reclamation and Trinity County hosted an informal workshop to discuss the type and nature of rehabilitation actions under consideration and to receive local input from landowners on their individual property conditions and concerns with respect to flow impacts and project implementation; the informal workshop was held on October 8, 2004, at the James residence on River Ranch Road in Douglas City. Trinity County initiated the formal public scoping process by forwarding a Notice of Preparation (NOP) of an EIR to the State Clearinghouse on January 20, 2006. The NOP and a summary of comments on the NOP are included in this document as Appendix B.

The NOP was circulated to the public; to local, state, and federal agencies; and to other interested parties in order to solicit comments on the Proposed Action. The public scoping period was January 20, 2006, through February 21, 2006, and scoping comments were received through March 10, 2006. Reclamation and Trinity County held a joint NEPA/CEQA scoping meeting on February 8, 2006, in Weaverville, California. During this meeting, members of the public were asked what issues they felt should be addressed in this EA/DEIR. As the public comment period continued, the lead agencies received letters that helped identify areas of concern. These areas of concern and other oral comments received at the scoping meeting were considered during the preparation of this EA/DEIR. The scoping and public involvement process is also described in Appendix B.

The scoping process determined that the Proposed Action could lead to significant impacts on specific natural resources and on the human environment. Based on the comments received during the scoping process, the issues addressed in this EA/DEIR include the following:

- land use;
- geology, fluvial geomorphology, and soils;
- water resources;
- water quality;
- fishery resources;
- vegetation, wildlife, and wetlands;
- recreation;
- socioeconomics, population, and housing;
- tribal trust;
- cultural resources;
- air quality;
- environmental justice;
- aesthetics;
- hazardous materials;
- noise;
- public services and utilities/energy;
- transportation and traffic circulation;
- construction-related impacts; and
- cumulative impacts.

These issues were used to develop the descriptions of the resource areas and the associated impact analysis presented in Chapters 3 and 4.

Error! Main Document Only.

1.6.1 AREAS OF POTENTIAL CONTROVERSY

The following issues associated with the Proposed Action are anticipated to be controversial, based on comments received during the scoping process:

- impacts to special-status species, including anadromous salmonids;
- type, extent, and location of in-channel rehabilitation activities;
- impacts to State Route (SR) 299, particularly the Indian Creek and Douglas City bridges;
- impacts to public and private water supplies;
- potential trespassing on private lands;
- potential spread of non-native invasive vegetation and techniques for non-native vegetation control;
- long-term ability of project area to be maintained by flows;
- temporary access during construction;
- short-term construction impacts; and
- potential effects to Wild and Scenic River ORVs.

1.6.2 PUBLIC REVIEW

This document is being circulated to local, state, and federal agencies and to interested organizations and individuals who may wish to review and comment on the analysis provided in this EA/DEIR. Publication of this EA/DEIR initiates the beginning of a 45-day public review period. Trinity County will hold two public hearings, one at a Planning Commission meeting and one at a Board of Supervisors meeting. Public comment on the EA/DEIR will be accepted orally at these hearings. However, to ensure proper interpretation of remarks, written comments are highly encouraged. Notice of the time and location of the public hearings will be published by Trinity County prior to the actual hearing date. All written comments and questions regarding the EA/DEIR that raise issues under NEPA, CEQA, or both, should be addressed to:

Brandt Gutermuth, Environmental Specialist
Trinity River Restoration Program
United States Department of the Interior – Bureau of Reclamation
P.O. Box 1300
1313 South Main Street
Weaverville, California 96093
Phone: (530) 623-1800
Fax: (530) 623-5944

Mr. Gutermuth will ensure that Trinity County, as the CEQA lead agency, receives copies of comments submitted so that it can review and respond to them, as required by CEQA. The EA/DEIR will be sent to the State Clearinghouse and will be available online at the TRRP website:

<http://www.trrp.net/RestorationProgram/IndianCreek.htm> and at the Mid-Pacific Region Bureau of Reclamation regional home page Northern California Area Office Environmental documents: Trinity River Mechanical Rehabilitation – Indian Creek Rehabilitation Site <

http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=2094 >. Copies of the EA/DEIR will be available for review at the following locations:

Trinity River Restoration Program
United States Department of the Interior
Bureau of Reclamation
1313 South Main Street
Weaverville, California 96093

U.S. Department of Interior
Bureau of Land Management
Redding Field Office
355 Hemsted Drive
Redding, CA 96002

Trinity County Planning Department
60 Glen Road
Weaverville, California 96093-2819

Trinity County Library, Weaverville Branch
211 Main Street
Weaverville, California 96093

Bureau of Land Management, Sacramento
2800 Cottage Way, Suite W-1834
Sacramento, California 95825-1886

Bureau of Reclamation, Shasta Area Office
16349 Shasta Dam Boulevard
Shasta Lake, California 96019

1.7 Purpose and Need for the Action

NEPA regulations require that an EA briefly specify the need that the agency is responding to in proposing the various alternatives, including the Proposed Action (40 C.F.R. Section 1508.9, subd. (a)). Similarly, CEQA requires that an EIR include a statement of the objectives to be achieved by a proposed project (CEQA Guidelines, Section 15124, subd. (b)). The objectives are intended to help the implementing agency develop a reasonable range of alternatives and aid decision makers in preparing findings, or, if necessary, a statement of overriding considerations.

1.7.1 PURPOSE AND NEED STATEMENT

The purpose of the Proposed Action is to provide increased juvenile salmonid rearing habitat on the mainstem Trinity River and to reduce flow impacts to homes and other human improvements located adjacent to the Trinity River from implementation of ROD flows. The ROD identified 47 discrete mechanical channel rehabilitation sites (including three side-channels) on the mainstem Trinity River between Lewiston and Helena. The Proposed Action will continue to advance the implementation efforts of the TRRP and provides the opportunity to:

- increase the diversity and amount of habitat for salmonids, particularly habitat suitable for rearing;
- increase rearing habitat for juvenile salmonids, including coho and Chinook salmon and steelhead;
- ensure that the flows prescribed in the ROD will not increase the likelihood of flood-related impacts to public resources and private property within the project boundary.
- increase the structural and biological complexity of habitat for various species of wildlife associated with riparian habitats;
- increase hydraulic and fluvial geomorphic diversity and complexity;

Error! Main Document Only.

- measure/demonstrate the ecological response to changes in flow regimes, morphological features, and aquatic, riparian, and upland habitats;
- provide a self-maintaining project where adequate maintenance flows are likely to occur independent of future TRD flows; and

The need for the Proposed Action results from:

- requirements in the ROD (U.S. Department of the Interior 2000) to restore the Trinity River fishery through a combination of higher releases from Lewiston Dam (up to 11,000 cubic feet per second [cfs]), floodplain infrastructure improvements, channel rehabilitation projects, fine and coarse sediment management, watershed restoration, and an AEAM Program.
- the expectation that the AEAM Program will continue to incorporate the experience provided through the planning, design, and implementation of the Proposed Action into future restoration and rehabilitation efforts proposed by the TRRP.
- the *existing* high likelihood of flooding (pre-Trinity ROD) of several homes and properties with potential loss of property and lives (as exemplified during the 1997 New Year's Day Flood).
- the current limitation on the operation of Trinity Dam during periods of high inflows, which limits safety of dam water releases to the Trinity River via Lewiston Dam to less than 11,000 cfs plus 100-year spring tributary flows when the actual controlled release capacity of the Trinity Dam is 13,750 cfs.

The approach and methods incorporated into the Proposed Action used information gained by constructing the Hocker Flat project. On-going monitoring of project performance at Hocker Flat and future sites will continue to be incorporated into the AEAM Program for future restoration and rehabilitation efforts.

1.7.2 GOALS AND OBJECTIVES OF THE PROPOSED ACTION

The goals of the TRRP provide the framework for the specific goals and objectives used to develop the action alternatives for this EA/DEIR. The following goals and objectives support the Proposed Action and provided the structure for development of the alternatives:

- protect and/or enhance the ORVs associated with the designation of a Wild and Scenic River (federal and California);
- induce changes in channel geometry in response to constructing channel and floodplain features designed for the river's current and future hydrologic regime;
- evaluate the evolution of channel planform features in response to designing and implementing the Proposed Action at a river segment (1 mile) scale;
- evaluate the biological response (aquatic, riparian, upland) to changes in the physical environment and incorporate this information into the AEAM Program;
- expand the understanding of the role that tributaries such as Indian Creek and Weaver Creek play in terms of accretion flow relative to mainstem flows;

- provide safe and reasonable access to the site for project planning, implementation, and monitoring;
- develop partnerships with willing participants and encourage positive landowner interest and involvement;
- design the project to function with the river's current hydrology (post-ROD) estimated at the site;
- integrate known fluvial and ecological theories and relationships with the site's measured physical and biological attributes and evaluate the response over a definitive time frame;
- conduct in-channel activities in a manner that reduces construction-related impacts, maximizes the river's ability to rehabilitate itself during high flows, and reduces the cost and complexity of implementation;
- attempt to preserve unique and valuable geomorphic and biological features wherever practicable (e.g., hydraulic controls, high-quality spawning or adult holding habitat, cottonwood galleries); and
- allow dam operators maximum flexibility to provide instream flow releases from Lewiston Dam adequate to meet fishery and geomorphic flow needs for the mainstem Trinity River and to maximize sediment transport in support of meeting Trinity River Total Maximum Daily Load (TMDL) objectives to restore the coldwater fishery beneficial use.

The following project objectives apply to the project's lead/responsible agencies for CEQA purposes:

- minimize the threat to public safety and potential damage to property posed by the existing high likelihood of flooding;
- provide maximum flexibility for implementing a variety of potential Trinity River fishery flow alternatives, as well as other flow alternatives outside the ROD, such as increasing dam releases during periods of high downstream tributary inflows;
- allow for high-efficiency sediment transport in the Trinity River to maximize the amount of sediment transported on a per acre-foot basis so that Trinity River can be removed from California's Clean Water Act Section 303(d) Impaired Waterbodies List, while minimizing the total amount of water necessary to transport sediment through the river system;
- provide maximum flexibility for operations of the Trinity River Division during periods of high runoff and flooding, which could result in increased water in storage available for multiple beneficial uses (i.e., fisheries, recreation, water supply, water quality, and power production).
- facilitate recovery of fish and wildlife resources that are listed as threatened and endangered.

The following objectives apply to the responsible and trustee agencies for the Proposed Action, including the California Regional Water Quality Control Board – North Coast Region (Regional Water Board), the State Lands Commission (SLC), CDFG, and the HVT:

- compliance with the California Water Code and Basin Plan to ensure the highest reasonable quality of waters of the state and allocation of those waters to achieve the optimum balance of beneficial uses;
- protection of the public trust assets of the Trinity River watershed;

Error! Main Document Only.

- conservation, restoration, and management of fish, wildlife, native plant, and jurisdictional wetland resources; and
- compliance with the Water Quality Control Plan for the Hoopa Valley Indian Reservation to preserve and enhance water quality on the Reservation, and to protect the beneficial uses of water.

1.8 General Setting and Location

The Trinity River originates in the rugged Salmon-Trinity Mountains of northern California in the northeast corner of Trinity County, California. The river flows generally southward until Trinity and Lewiston dams impound it. From Lewiston Dam, the river flows westward for 112 miles until it enters the Klamath River near the town of Weitchepoc on the Yurok Reservation. The Trinity River passes through Trinity and Humboldt counties and the Hoopa Valley and Yurok Indian Reservations, draining approximately 2,965 square miles. The Klamath River flows northwesterly for approximately 40 miles from its confluence with the Trinity River before entering the Pacific Ocean (Figure 1.1).

The Indian Creek Rehabilitation Site: Trinity River Mile 93.7 to 96.5 is located along an approximately 2.8-mile stretch of the mainstem Trinity River between the communities of Lewiston and Douglas City, Trinity County, California;. To facilitate the engineering and environmental compliance efforts, the site boundary encompasses lands on either side of the Trinity River. The project boundary includes several distinguishing geographical features, namely Weaver Creek and Indian Creek. A general area known as Union Hill includes the upland area on the right side of the Trinity River, east of Weaver Creek. From a historical perspective, Union Hill provides the basis for place names in the area (e.g., Union Hill Gulch, Union Hill Mine/Pond, and Union Hill Road). Figure 1.2 depicts the general location of the site, relative to other geographic points of interest.

The TRRP staff, in conjunction with interdisciplinary review from the TMC technical staff, developed the site boundary to incorporate a wide range of rehabilitation activities initially considered. These activities include removal of the riparian berms, rehabilitation of floodplain and in-channel alluvial features, construction of off-channel habitat for aquatic- and riparian-dependent species, and rehabilitation of upland habitat.

1.9 Description of the Proposed Action

Initially, 44 potential channel rehabilitation sites and three potential side channel sites between Lewiston Dam and the North Fork Trinity River were identified (FEIS/EIR [U.S. Fish and Wildlife Service et al. 2000]). Subsequently, in a detailed review of potential river rehabilitation areas, a total of 104 potential rehabilitation sites were identified. Ultimately, the sites were selected using criteria that identified physical features and processes such as channel morphology, sediment supply, and high-flow hydraulics that would encourage a dynamic alluvial channel. Factors such as property ownership, access to the sites, and engineering and economic feasibility were also considered in the site selection process.

In general, the approach to the channel rehabilitation effort is to selectively remove fossilized riparian berms that developed after the TRD was completed as a result of the loss of scouring associated with peak flows. Along with berm removal, physical alteration of other alluvial features (e.g., floodplains, mid-

channel bars) and removing riparian vegetation at strategic locations would promote the alluvial processes necessary for the restoration and maintenance of alternate bar riverine habitats.

As described in the FEIS, the rehabilitation sites exhibit a variety of conditions that require site-specific designs. The FEIS also recognized that, in many instances, the entire site would not require treatment to facilitate rehabilitation. This is because strategically treating certain areas is expected to result in a dynamic alluvial channel that will promote the formation and maintenance of an alternate bar channel in both treated and untreated areas.

The TRRP identified 18 discrete activity areas within the boundary of the Indian Creek site. Additionally, access to these areas requires low-flow crossings and/or a network of existing and new roads. The type, extent, and level of activity in each area may be different, depending on the alternative. These areas were defined by the interdisciplinary design team to include riverine areas, upland areas, and construction support areas. For each site, riverine areas are labeled with an R preceding the site number (e.g., R-1, R-2); upland areas are labeled with a U preceding the site number (e.g., U-1, U-2); and staging/use areas are included in areas characterized with a C. Low-flow channel crossings are labeled with an X, and roads are identified as existing or new. The locations of, and additional information on, these areas is provided in Chapter 2.

The activities included in the Proposed Action emphasize selective removal of fossilized riparian berms (berms that are anchored by extensive woody vegetation and consolidated sand deposits; reconnecting the river's floodplain with the river at intermediate flows (between 450 and 6,000 cfs); and enhancing the bed and banks of the Trinity River to promote well-distributed aquatic habitat over a range of intermediate flows. Removal of material at the Indian Creek and Weaver Creek deltas will also provide functional aquatic habitat under a range of flow conditions. Since the completion of the TRD, channel encroachment has resulted from changes in transport capacity. Removing the berms and vegetation at strategic locations, in conjunction with excavation in select locations (deltas, mid-channel bar/island), will promote the river processes necessary for the restoration and maintenance of Trinity River alternate bars, thereby enhancing salmonid rearing habitat.

The TRRP has developed a number of programmatic objectives for channel rehabilitation projects. These objectives are described in Chapter 2. The programmatic objectives were used to identify a number of specific activities that could be applied at the Indian Creek site. Each activity area was established to meet a suite of specific objectives in conformance with the overall goals and objectives outlined for the TRRP. Ultimately, the goal of these channel rehabilitation efforts is to provide suitable rearing habitat for anadromous salmonids and to reestablish geomorphic processes associated with an alluvial river (alternate point bars).

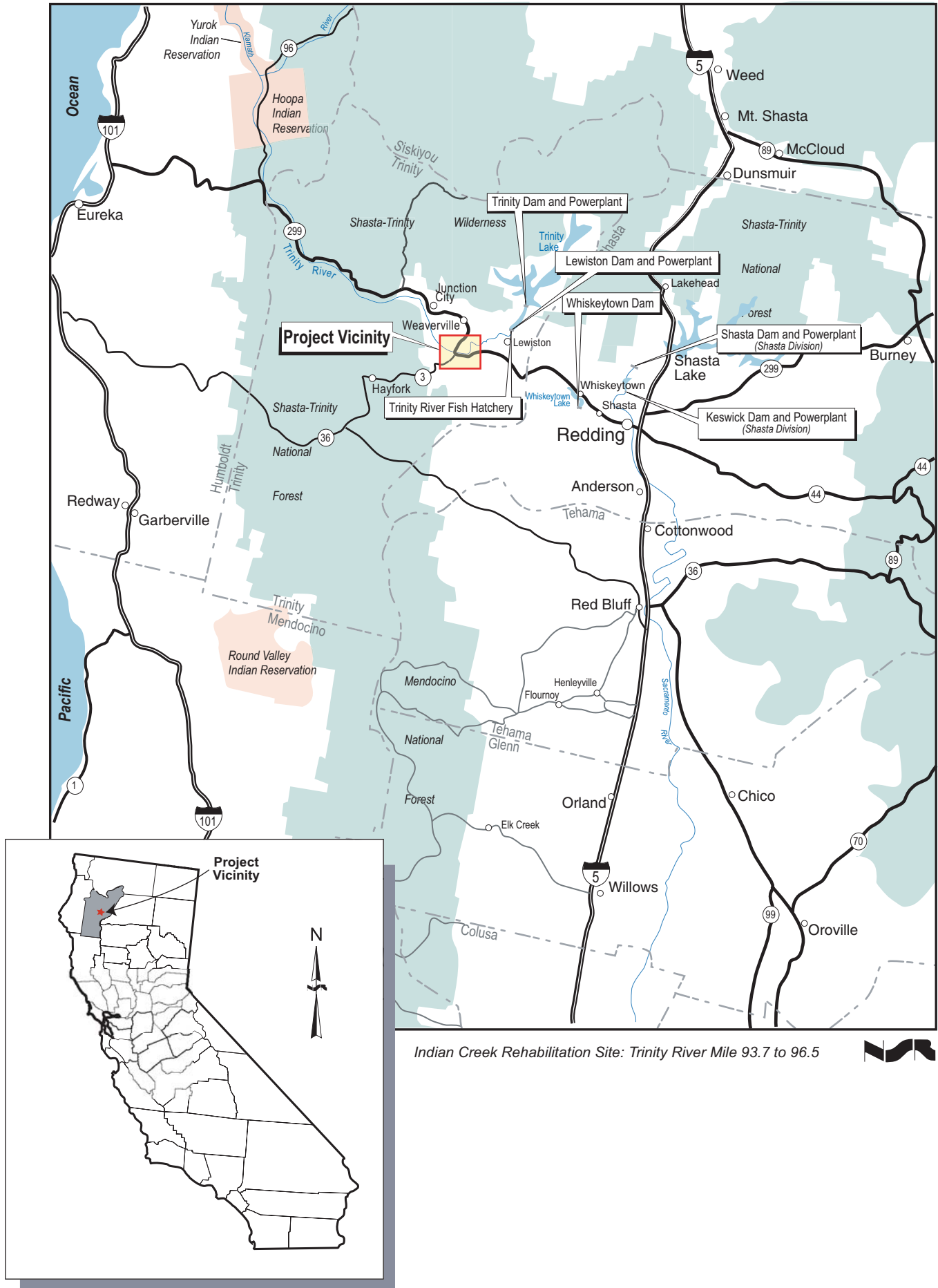
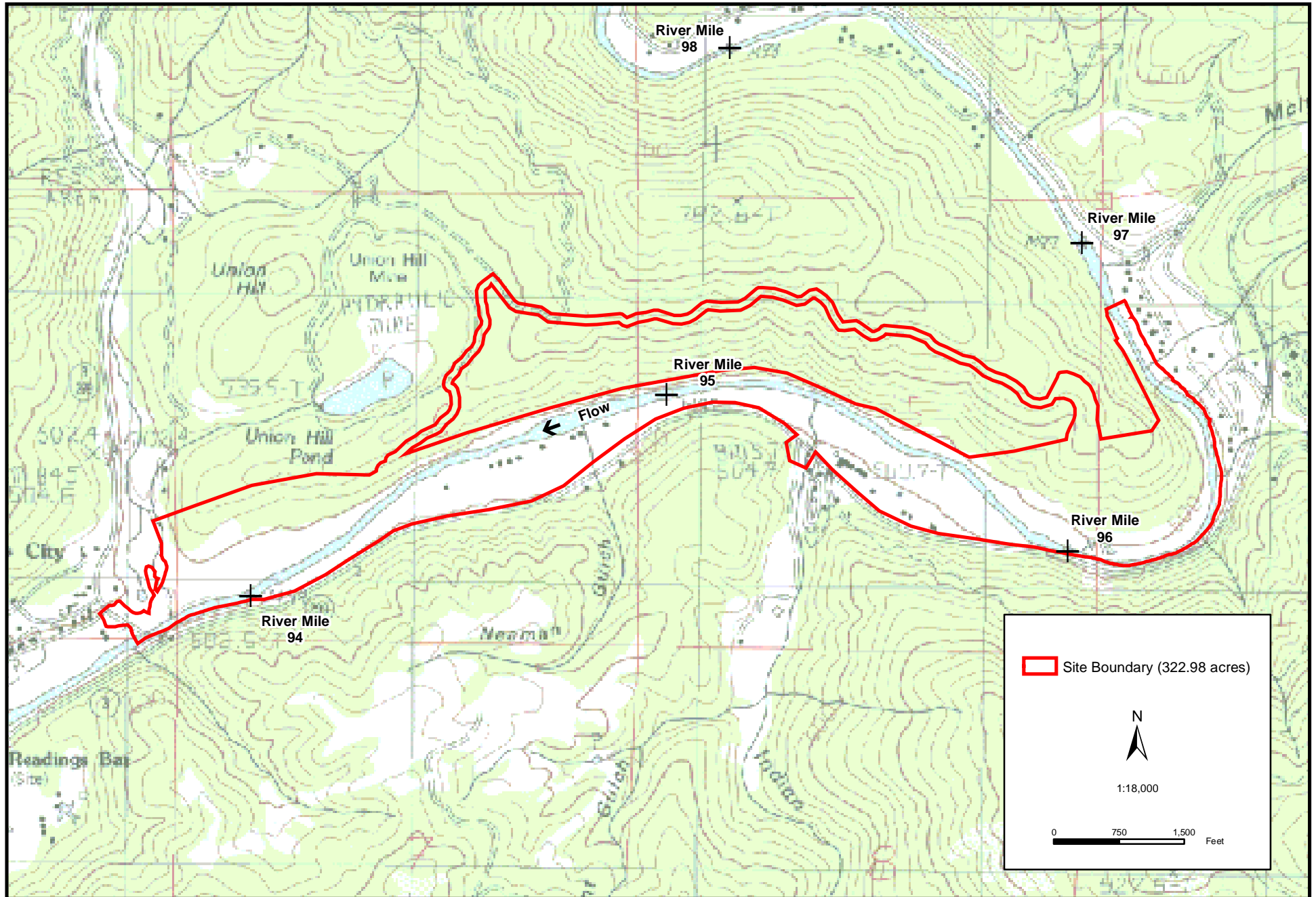


Figure 1.1. Project Vicinity



Error! Main Document Only.

The Proposed Action includes 15 rehabilitation activities. Each rehabilitation activity is identified with an alpha code for reference throughout the EA/DEIR. Defined rehabilitation activities are shown in Table 1-1.

**TABLE 1-1 { Tc "Table 1-1 Rehabilitation Activities" \F
B \L "1" }
REHABILITATION ACTIVITIES**

Label	Activity Type
A	Recontouring
B	Berm removal
C	Constructed floodplain (2,000 cfs)
D	Constructed floodplain (4,500 cfs)
E	Side channel (1,000 cfs)
F	High-flow side channel (6,000 cfs)
G	Alcove (450 cfs, 6,000 cfs)
H	In-channel bar and bank excavation (450 cfs)
I	Delta excavation
J	Placement of excavated materials
K	Staging/use areas
L	Roads, existing
M	Roads, new
N	Crossings (Trinity River, Weaver Creek)
O	Revegetation

The following section provides a brief description of the riverine activities included in the Proposed Action. In addition to the riverine activities, several other activities are proposed. These activities include vegetation removal, disposal and placement of excavated material, staging, watering, and monitoring.

1.9.1 PROPOSED RIVERINE ACTIVITIES

The Indian Creek site includes 10 riverine activity areas: four along the right side of the Trinity River and six on the left. These areas are associated with the bank, side channel, floodplain, and delta features, as well as an artifact of bucket-line dredge operations (riparian wetland) that currently exists. To varying degrees, these features are related to the construction and operation of the TRD. Proximity to the river, existing topography (elevation), and the type, location, and density of riparian vegetation were used to define the riverine areas for this site. The occurrence and concentration of noxious and invasive plants were also considered in delineating these areas.

1.10 Preparers of the EA/DEIR

Since 2002, the TRRP has been involved in implementation of the ROD. Reclamation, as the NEPA lead agency, in cooperation with BLM, the USFS, the Regional Water Board, and Trinity County (the CEQA lead agency for this project), continues to move forward with the measures prescribed in the ROD. Representatives of the TMC provided support to the lead and cooperating agencies throughout this process.

1.11 Required Permits and Approvals

Various lead, cooperating, and responsible agencies will use the EA/DEIR for their permitting and approval processes. Additional discussion of these processes is provided in Chapter 5. Implementation of any of the action alternatives would require the following federal, state, and local permits and approvals.

1.11.1 FEDERAL

U.S. Army Corps of Engineers

Section 404 of the Clean Water Act (CWA) authorizes the U.S. Army Corps of Engineers (Corps) to issue permits for the discharge of dredged or fill materials into waters of the United States, including wetlands (33 USC 1344). The Corps is authorized to issue either individual or general permits under Section 404. Under its general permit authorization, the Corps has issued a number of permits on a nationwide basis. As long as the activity has complied with the conditions set forth in the applicable nationwide permit, there is no need for a project proponent to apply for an individual permit from the Corps. For several of these nationwide permits, the Corps requires the project proponent to submit a pre-discharge notification requesting confirmation of project compliance with conditions of the nationwide permit. Based on a pre-application meeting with the Corps, it appears that the Proposed Action may be permitted under Nationwide Permit Number 27 (Wetland and Riparian Restoration and Creation Activities).

Reclamation submitted a wetland delineation report pursuant to Section 404 of the CWA for the project. The wetland delineation report and the Corps' field verification are contained in Appendix C.

National Marine Fisheries Service and U.S. Fish and Wildlife Service

Federally listed species are protected under the mandates of the Endangered Species Act (ESA) of 1973. "Take" of listed species, defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or [the] attempt to engage in any such conduct," is prohibited. Either the National Marine Fisheries Service (NMFS) or USFWS, depending on the species, may authorize "take" that is incidental to an otherwise lawful activity. Sections 7 and 10(a) of the ESA provide a method for permitting an action that may result in an "incidental take" of a federally listed species. "Incidental take" refers to "take" of a listed species that is incidental to, but not the primary purpose of, an otherwise lawful activity. Incidental take is permitted under Section 7 for projects on federal land or involving a federal action, while Section 10(a) provides a method for permitting an incidental take resulting from a state or private action. Based on discussion with NMFS, certain non-flow measures, including the mechanical rehabilitation projects, were considered in the October 2000 NMFS Biological Opinion issued in response to the FEIS. Furthermore, NMFS identified the mechanical rehabilitation projects described in the ROD

Error! Main Document Only.

as reasonable and prudent measures. As required by the NMFS Biological Opinion, the following conditions will be incorporated into the Proposed Action:

- 4.a. Reclamation shall meet with NMFS annually in March to coordinate during the advanced development and scheduling of habitat rehabilitation projects, including mainstem channel rehabilitation projects, sediment augmentation program, and dredging of sediment collection pools.
- 4.b. The USFWS and/or Reclamation shall provide for review of individual mainstem channel rehabilitation projects via the technical team (“designated team of scientists” [USFWS et al. 2000b], “technical modeling and analysis team” [Trinity River Mainstem Fishery Restoration DEIS]) or equivalent group, and provide a written recommendation to NMFS concerning whether the projects are similar to those described in the Trinity River Mainstem Fishery Restoration DEIS and should be covered by this incidental take statement. If the review process results in a determination that these projects and their impacts to aquatic habitat are substantially different than described in the Trinity River Mainstem Fishery Restoration DEIS (U.S. Fish and Wildlife Service et al. 2000b), the technical team will recommend to NMFS that additional ESA Section 7 consultation is appropriate.

In addition to the protection they receive under the ESA, salmon species are protected under the mandates of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended in 1996. The MSA established procedures designed to identify, conserve, and enhance Essential Fish Habitat (EFH) for those species regulated under a federal fisheries management plan. EFH refers to those waters and substrates necessary for spawning, breeding, feeding, or growth to maturity (67 FR 2343).

Reinitiating Section 7 consultation under the ESA between Reclamation and NMFS and/or between Reclamation and USFWS may be necessary if the conditions under which the Biological Opinions prepared by NMFS and USFWS change significantly. An EFH consultation between Reclamation and NMFS may be necessary if adverse effects to salmon or their habitat are identified.

Bureau of Land Management

Wild and Scenic Rivers

Federal protection of the Trinity River, which is part of the Wild and Scenic Rivers System, is required under Section 7 of the federal Wild and Scenic Rivers Act (WSRA) to preserve its free-flowing condition; anadromous and resident fisheries; and outstanding geologic, wildlife, flora and fauna, historic and cultural, visual, recreational, and water quality values. Though the Trinity River is designated specifically for its outstandingly remarkable anadromous fishery value, all recreational and free flowing characteristics are to be protected under Section 7 of the federal WSRA. A determination that follows the Evaluation Procedure presented in Appendix C of the Technical Report of the Interagency Wild and Scenic Rivers Coordinating Council, Wild and Scenic Rivers Act: Section 7 is included as Appendix D. Under an interagency agreement between the National Park Service, the BLM, and the USFS, the BLM typically has the responsibility for conducting Section 7 determinations for the Trinity River segment associated with the Proposed Action.

Northwest Forest Plan

In response to the 1994 Record of Decision for the Northwest Forest Plan (Final Supplemental Environmental Impact Statement for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl), the BLM prepared the Mainstem Trinity River Watershed Analysis. The Watershed Analysis focused on a program of habitat restoration actions along the Trinity River corridor. Although the emphasis was placed on aquatic/riparian resources, the Watershed Assessment included upland areas and issues as they relate to the mainstem Trinity River.

1.11.2 STATE OF CALIFORNIA

California Department of Transportation

Encroachment Permit

A California Department of Transportation (Caltrans) encroachment permit will be required for activities that may encroach on the structures or improvements within the Caltrans right-of-way along SR 299. Caltrans rights-of way in this area typically reach 50 to 70 feet from the highway centerline.

California Department of Fish and Game

Streambed Alteration Agreement

Trinity County, as the CEQA lead agency, will be required to obtain a Streambed Alteration Agreement from the CDFG pursuant to California Fish and Game Code Section 1602. This requirement is prefaced on the fact that Trinity County is the recipient of CDFG and EPA grant funds to assist with project implementation. If Reclamation were performing the project without financial assistance from Trinity County, there would be no requirement for a Streambed Alteration Agreement because the federal government is not subject to California Fish and Game Code Section 1602.

California Endangered Species Act Take Permit

State-listed species are fully protected under the mandates of the California Endangered Species Act (CESA). On August 30, 2002, the California State Fish and Game Commission (Commission) determined that coho salmon in California warranted protection as a threatened species north of Punta Gorda (including the Trinity River) and as an endangered species south of Punta Gorda under the CESA. The Commission directed CDFG to develop a coho salmon recovery strategy plan within one year. The CDFG completed a plan on January 26, 2004, and Southern Oregon/Northern California Coasts (SONCC) Evolutionarily Significant Unit (ESU) coho salmon were officially state listed as threatened on August 5, 2004.

Trinity County, as the CEQA lead agency, will be required to obtain a CESA incidental take authorization under Fish and Game Code Section 2081(b). As with the Streambed Alteration Agreement, the CDFG has determined that it does have authority to issue a CESA incidental take authorization on this project due to the funding provided by CDFG and the EPA to Trinity County based upon legislative action that gives CDFG jurisdiction over wildlife management and actions within the state. Under CESA, and upon concurrence from NMFS that its Biological Opinion and an incidental take statement for “take” of listed SONCC ESU coho salmon are adequate (pursuant to the federal ESA), Trinity County may request a CESA Consistency Determination from the Director of the CDFG, pursuant to Section 2080.1 of the

Error! Main Document Only.

California Fish and Game Code. Within 30 days after receipt of the notification, the Director of the CDFG shall determine whether the federal incidental take statement is consistent with CESA. If it is determined to be consistent with CESA, no further authorization or approval is necessary under CESA. If the Director of the CDFG determines that the federal Incidental Take Statement is not consistent, then Trinity County will be required to obtain a take permit pursuant to California Fish and Game Code Section 2081(b).

California Wild and Scenic Rivers Act

No permits are required under the California WSRA. However, compliance with laws related to the federal WSRA may require related permitting and consultation actions. These include the CWA Section 404 permit and CWA Section 401 Water Quality Certification.

Regional Water Quality Control Board

Water Quality Certification/NPDES Permit

The Regional Water Board is responsible for enforcing and protecting water resources in association with the Proposed Action. The Regional Water Board also controls the discharge of wastes to surface waters through the National Pollutant Discharge Elimination System (NPDES) permit process. Waste Discharge Requirements are established in NPDES permits to protect beneficial uses. Therefore, the Regional Water Board will act as a CEQA responsible agency, relying on the EIR certified by Trinity County.

The Regional Water Board requires that a project proponent apply for and obtain a CWA Section 401 Water Quality Certification for any project that requires a CWA Section 404 permit from the Corps. Since the Proposed Action and alternatives to the Proposed Action would have the potential to affect water quality in the Trinity River, Reclamation will prepare and submit to the Regional Water Board an application for Section 401 Water Quality Certification and/or Waste Discharge Requirements (Dredge/Fill). The application will be submitted to the Regional Water Board when the pre-construction notification is sent to the Corps. The Regional Water Board is likely to impose water quality limitations and project conditions through issuance of Waste Discharge Requirements or Section 401 Certification.

An NPDES General Permit for Storm Water Discharges Associated with Construction Activities (General Permit) will also be required. The General Permit requires preparation and implementation of a Storm Water Pollution Prevention Plan to help identify the sources of sediment and other pollutants that affect the quality of storm water discharges and to describe and ensure the implementation of Best Management Practices to reduce or eliminate sediment and other pollutants in storm water as well as non-storm water discharges.

1.11.3 LOCAL

The Trinity County Floodplain Management Ordinance (Section 29.4 of the County Zoning Ordinance) requires a Floodplain Development Permit for projects that would alter the Trinity River floodplain on private lands within the jurisdiction of Trinity County. This permit requires certification by a registered professional engineer or architect that construction or replacement of bridges, roadways, and bank slope protection devices will not adversely affect the flood-carrying capacity of any altered portion of the watercourse, and will not cumulatively raise the 100-year floodplain elevations by more than 1 foot in the

project area. The ordinance also requires notification of adjacent communities, CDFG, the Corps, the Regional Water Board, and the California Department of Water Resources (DWR) prior to any alteration or relocation of a watercourse, and the submission of evidence of such notification to the Federal Insurance Administration and FEMA.

The hauling of loads that exceed weight, height, or width limits on Trinity County roads (such as hauling heavy equipment or oversized bridge components) requires an encroachment permit from the Trinity County Department of Transportation. Work that will modify or encroach on County roads, such as the proposed Indian Creek project, may require a Trinity County encroachment permit.

1.12 Legislative and Management History

The following is a brief chronology of the most pertinent legislation, authorities, and management actions that have occurred relevant to the Trinity River basin.

- 1855 – Klamath River Reservation established
- 1864 – Hoopa Valley Reservation established
- 1891 – Hoopa Valley Reservation boundary amendment
- 1938 – Rivers and Harbors Act authorized construction of the Central Valley Project (CVP)
- 1955 – Congress authorized the construction and operation of the TRD
- 1964 – The TRD was completed and fully operational
- 1971 – The Task Force, composed of federal, state, and local agencies and tribes, was established
- 1976 – Pacific Fishery Management Council (PFMC) established
- 1980 – USFWS prepared EIS relating impacts of TRD to Chinook salmon and steelhead declines
- 1980 – Public Law 96-335 – Trinity River Stream Rectification Act
- 1980 – Trinity River designated a California Wild and Scenic River
- 1981 – Trinity River designated a Federal Wild and Scenic River
- 1981 – Interior Secretary’s Decision to temporarily increase Trinity River instream flows; USFWS is ordered to initiate 12-year Trinity River Flow Evaluation Study.
- 1983 – USFWS prepared EIS for Trinity River Restoration
- 1984 – Trinity River Basin Fish and Wildlife Management Act (PL 98-541)
- 1984 – Trinity River Flow Evaluation study (TRFE) started
- 1988 – Yurok Reservation recognized and established
- 1988 – Reclamation and USFWS establish an office in Weaverville
- 1991 – Interior Secretary’s decision to temporarily increase Trinity River flows to 340,000 af until TRFE completed (Lujan Decision)
- 1992 – Central Valley Project Improvement Act (PL 102-575) (Section 3406(b)(23))

Error! Main Document Only.

- 1992 – Trinity River Water Quality Objectives and Interim Action Plan approved as Clean Water Act standards by the EPA
- 1994 – EIS initiated for Trinity River Mainstem Fishery Restoration program
- 1995 – Reclamation/USFWS Weaverville office is closed.
- 1996 – Trinity River Basin Fish and Wildlife Management Act (PL 104-43) reauthorized and amended
- 2000 – Record of Decision for Trinity River Mainstem Fishery Restoration issued by Department of the Interior
- 2001 – Litigation on Record of Decision, filed in United States District Court for the Eastern District of California, results in issuance of preliminary injunction urging Department of the Interior to undertake preparation of Supplemental EIS, although non-flow aspects of the ROD are allowed to proceed.
- 2002 – Reclamation’s TRRP office is established in Weaverville.
- 2003 – United States District Court enters final judgment requiring Department of the Interior to prepare Supplemental EIS and invalidating certain aspects of Biological Opinions issued by NOAA Fisheries and USFWS.
- 2004 – U.S. Court of Appeals for the Ninth Circuit enters opinion reversing District Court with regard to preparation of an SEIS. Immediate implementation of all aspects of the 2000 ROD is mandated. Subsequently, all parties to the litigation acknowledged the court’s opinion.

Additional details on the legislative and management history can be found in the Trinity River Mainstem Fishery Restoration FEIS/EIR (U.S. Fish and Wildlife Service et al. 2000) and Appendix A of the Hocker Flat Rehabilitation Site: Trinity River Mile 78 to 79.1 EA/DEIR (U.S. Bureau of Reclamation 2004). Both of these documents are on file at the TRRP office in Weaverville, California.

1.13 Indian Tribes

Secretarial Order No. 3175 states that the DOI, “when engaged in the planning of any proposed action or action, will ensure that any anticipated effects on Indian Trust resources are explicitly addressed in the planning, decision, and operational documents that are prepared for the project.” This mandate was reaffirmed in a Presidential directive declaring the sovereign rights of Indian tribes and the government-to-government status of relations between the United States and recognized tribes. Accordingly, this EA/DEIR provides a detailed assessment of potential effects on Indian Trust resources and, consequently, on Indian tribes. Consistent with DOI policy, the analysis addresses only those tribes of the Klamath/Trinity Region that are officially recognized by the United States (Pevar 1992): the Hoopa Valley, Karuk, Klamath, and Yurok. Local unrecognized tribes include the Nor-Rel-Muk Nation and the Tsnungwe Tribe.

The Tribal Trust discussion (Section 3.10) focuses principally on the Hoopa Valley and Yurok tribes, since, of the recognized Indian tribes of the Klamath/Trinity Region, they would be most directly affected by the Proposed Action. It is acknowledged, however, that the impacts are pertinent to the Karuk and Klamath people, since they share a common regional heritage with the Hoopa Valley and Yurok tribes.

1.14 Integration of Related Environmental Review Requirements

In addition to integrating the NEPA and CEQA processes, this document integrates these processes with the environmental review and consultation requirements of other relevant federal and state programs. The following section provides an overview of the principal environmental statutes that are integrated into the EA/DEIR.

1.14.1 COMPLIANCE WITH SECTION 404 OF THE CLEAN WATER ACT

Section 404 of the CWA authorizes the Corps to issue permits for the discharge of dredged or fill materials into waters of the United States, including wetlands (33 USC 1344). The Corps is authorized to issue either individual or general permits under Section 404. Under its general permit authorization, the Corps has issued a number of permits on a nationwide basis. As long as the activity has complied with the conditions set forth in the applicable nationwide permit, there is no need for a project proponent to apply for an individual permit from the Corps. For several of these nationwide permits, the Corps requires the project proponent to submit a pre-discharge notification to the Corps requesting confirmation that the project has complied with the nationwide permit conditions. Section 401 Certification is required for any projects authorized pursuant to CWA Section 404.

1.14.2 COMPLIANCE WITH SECTION 401 OF THE CLEAN WATER ACT

Section 401 of the federal CWA requires that state water quality standards not be violated through the discharge of pollutants into waters of the United States, including wetlands (33 USC 1344). Under this section, applicants for a federal permit to conduct activities that may result in a discharge of pollutants into waters of the United States must request and obtain a certification from the state in which the discharge would originate. The Regional Water Board will use the information available in this EA/DEIR, the Section 404 application submitted to the Corps, and the Section 401 Certification application to prepare the Section 401 Certification.

1.14.3 COMPLIANCE WITH THE FEDERAL ENDANGERED SPECIES ACT

Section 7 of the ESA requires federal agencies, in consultation with the Secretary of the Interior, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of designated critical habitat for these species. For compliance with Section 7 of the ESA, Reclamation requested and received from the USFWS a list of species that are federally listed as endangered or threatened that may be present in the project area (Appendix E). Reclamation conferred with NMFS concerning project effects to the SONCC ESU coho salmon pursuant to Section 7 of the ESA; this ESU of coho salmon is both federally and state listed as threatened. This EA/DEIR, in conjunction with the Biological Opinion that it prepared for the FEIS, will be used by NMFS, as described in Section 1.11.1.

1.14.4 COMPLIANCE WITH THE NATIONAL HISTORIC PRESERVATION ACT

Reclamation has formally consulted with the Office of Historic Preservation (OHP) and the Advisory Council on Historic Preservation (ACHP). This consultation is documented in the Programmatic Agreement (PA) between the USFWS, Reclamation, BLM, HVT, the Californian State Historic Preservation Officer (SHPO), and the ACHP regarding implementation of the Trinity River Fishery

Error! Main Document Only.

Restoration Program (Appendix F). In addition, letters requesting information regarding possible Native American concerns along the Canyon Creek reach of the Trinity River were sent to tribal contacts recommended by the Native American Heritage Commission and field investigations were conducted by Reclamation staff in accordance with the PA.

1.14.5 COMPLIANCE WITH FEDERAL WILD AND SCENIC RIVERS ACT

Section 7(a) of the federal WSRA prohibits departments and agencies of the United States from assisting by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the ORVs for which the Wild and Scenic River designation was established.

While the federal WSRA does not prohibit development along a river corridor, it does specify guidelines for the determination of appropriate actions within the banks of a Wild and Scenic River that protect or enhance ORVs. As the designated river manager for the Trinity River between Lewiston and Helena, California, BLM must prepare a Section 7 determination for all proposed water resources projects that would affect the free-flowing characteristics of designated river reaches. This determination will ensure that the Proposed Action does not adversely affect the values for which the river was designated. This EA/DEIR provides the information necessary to support a WSRA Section 7 determination.

1.14.6 COMPLIANCE WITH FEDERAL NOXIOUS WEED ACT

Although the Plant Protection Act superseded and repealed most of the Federal Noxious Weed Act of 1974, Section 15 of the Act remained intact. Section 15 of this act requires federal land management agencies to develop and establish a management program for control of undesirable plants that are classified under state or federal law as undesirable, noxious, harmful, or poisonous on federal lands under the agency's jurisdiction (7 U.S.C. 2814 (a)). The act also requires federal agencies to coordinate with state and local agencies in the management of undesirable plants.

1.14.7 COMPLIANCE WITH EXECUTIVE ORDER 11990 (WETLANDS)

Executive Order 11990 is an overall wetlands policy for all agencies managing federal lands, sponsoring federal projects, or providing federal funds to state or local projects. The order requires federal agencies to follow "avoidance-mitigation-preservation" procedures and provide the opportunity for public input before proposing new construction in wetlands and requires federal agencies to avoid impacts on wetlands where practicable.

1.14.8 COMPLIANCE WITH FEDERAL EXECUTIVE ORDER 11988 (FLOODPLAIN MANAGEMENT)

Executive Order 11988 requires federal agencies to prepare floodplain assessments for proposals located within or affecting floodplains. If an agency proposes to conduct an action in a floodplain, it must consider alternatives to avoid adverse effects and incompatible development of the floodplain.

If the only practicable alternative involves siting of structures in a floodplain, the agency must minimize potential harm to or within the floodplain and explain why the action is proposed in the floodplain. As discussed in Section 3.4, Water Resources, and Appendix G, Floodplain Assessment, the impact analyses conclude that the Proposed Action would not constitute a significant encroachment on the base floodplain.

1.14.9 COMPLIANCE WITH FEDERAL EXECUTIVE ORDER 12898 (ENVIRONMENTAL JUSTICE)

Executive Order 12898 requires federal agencies to identify and address disproportionately high and adverse human health and environmental effects of federal programs, policies, and activities on minority and low-income populations. Federal agencies are required to provide opportunities for input in the NEPA process by affected communities and to evaluate significant and adverse effects of proposed federal actions on minority and low-income communities during the preparation of NEPA documents. The NEPA scoping process can be used to solicit information on the concerns of minority and low-income populations. If a proposed federal action will not result in significant adverse impacts on minority and low-income populations, the environmental document must describe how Executive Order 12898 was addressed during the NEPA process. Upon issuance of this draft, the public review process will include a statement from Reclamation that it is soliciting input from the public regarding potential adverse impacts of the Proposed Action on minority and low-income populations.

1.14.10 COMPLIANCE WITH FEDERAL EXECUTIVE ORDER 13112 (INVASIVE SPECIES)

Executive Order 13112 requires federal agencies to use relevant programs and authorities to:

- prevent the introduction of invasive species;
- detect and control populations in a cost-effective and environmentally sound manner;
- provide for restoration of native species;
- promote public education on invasive species; and
- not authorize, fund or carry out actions to cause or promote the spread or introduction of invasive species.

Description of Proposed Action and Alternatives

This chapter describes the Proposed Action and alternatives considered for the proposed rehabilitation site. The term Proposed Action rather than Proposed Project is used in this document for consistency; for the purposes of this document, the two terms are synonymous. This chapter includes a description of the process used by Reclamation and Trinity County to identify the Proposed Action and potential alternatives to be fully analyzed in this EA/DEIR. Detailed description of the No-Action Alternative, Proposed Action, Alternative 1, and Alternative 2 are provided, along with a detailed account of design criteria, construction criteria and methodologies, and tentative construction schedules.

2.1 Project Overview

The lead agencies for this EA/DEIR considered four alternatives for the purpose of analysis. The No-Action Alternative is considered to be the environmental baseline for purposes of NEPA analysis, while the “existing environment” is considered to be the baseline for CEQA purposes. As a practical matter, this distinction has no real consequence as applied herein, although it sometimes does in situations where a future No-Action scenario differs significantly from actual existing conditions at the time of document preparation.

The alternatives were developed using input from the various stakeholders, particularly local residents and resource agency personnel, reviewing preliminary engineering data, and considering various social, physical, and biological factors. Pursuant to CEQA requirements, Alternatives 1 and 2 are intended to meet most of the basic project objectives (NEPA purpose and need) while substantially lessening or avoiding one or more impacts of the Proposed Action that, absent mitigation measures or project features operating as de facto mitigation, might be significant. This environmental document evaluates the alternatives, including the No-Action Alternative, the Proposed Action, Alternative 1, and Alternative 2 at an equal level of detail. Alternatives considered but not selected for evaluation are briefly discussed at the end of this chapter.

This EA/DEIR addresses rehabilitation activities within the Indian Creek Rehabilitation Site. It does not address other rehabilitation sites identified in the ROD, other than those described in Chapter 4 of this document. The flow regime used to evaluate the Proposed Action and alternatives considered in this EA/DEIR are the flows authorized by the ROD, as upheld by the U.S. Court of Appeals for the Ninth District on November 5, 2004. Based on this ruling, the ROD flows are deemed to constitute the “existing [hydrological] environment” for CEQA purposes, and are considered part of both the No-Project Alternative for CEQA and the No-Action Alternative for NEPA. The hydrological environment for purposes of alternatives development and impact analysis is based on delivery of ROD flows with the addition of accretion flows to the Trinity River from tributaries between Lewiston Dam and the North Fork Trinity River, as described in Section 3.4, Water Resources.

2.2 Project Location

The Trinity River originates in the rugged Salmon-Trinity Mountains of northwest California, approximately 10 miles southwest of the town of Weed, California. The river flows generally southward until Trinity and Lewiston dams impound it. From Lewiston Dam, the river flows westward for 112 miles, terminating at the Klamath River near the town of Weitchpec, California, on the Yurok Reservation. The Trinity River drains approximately 2,965 square miles and encompasses portions of Trinity and Humboldt counties and the Hoopa Valley and Yurok reservations. The Klamath River flows northwesterly for approximately 40 miles from its confluence with the Trinity River before entering the Pacific Ocean. In general, the Proposed Action focuses on a 2.8-mile reach of the mainstem Trinity River immediately upstream of Douglas City, Trinity County, California. The vicinity of the Proposed Action is shown in Figure 1.1 in Chapter 1. The direct, indirect, and cumulative impacts assessed in this EA/DEIR would all occur within the Trinity River basin.

The Indian Creek site begins at River Mile (RM) 96.5 and extends 2.8 miles downstream along the Trinity River. It is found on the *Weaverville, California* 7.5-minute U.S. Geological Survey (USGS) quadrangle map, Township 32 North, Range 10 West, Section 1, and Township 33 North, Range 9 West, Section 4, 5, and 6, Mount Diablo Base and Meridian (MDB&M), 040° 39' 30" North latitude by 122° 55' 10" West longitude. The site boundary is illustrated in Figure 1.2 in Chapter 1.

2.3 Development of Alternatives

This section describes the alternatives that were developed to address the purpose and need, and the goals and objectives outlined in Chapter 1. This section also describes the No-Action conditions, which represents the baseline for NEPA purposes. As noted earlier, No-Action conditions and “existing conditions” (a CEQA concept) are essentially the same. To ensure that a reasonable range of alternatives is considered under NEPA and CEQA, the lead agencies developed two alternatives that are responsive to the purpose and need, the goals and objectives of the Proposed Action, and public comments submitted during scoping.

The selection of potentially feasible alternatives, which will ultimately lead to a preferred alternative, was driven by a number of factors. For an alternative to be considered potentially feasible (and therefore subject to full NEPA and CEQA analysis), it must have the ability to meet most of the purposes and objectives identified for the Proposed Action. Section 2.8 provides a brief description of alternatives considered but eliminated from further evaluation.

The following criteria were applied to evaluate the Proposed Action’s ability to meet the purpose and need established in Chapter 1:

- Effectiveness – Methods, materials, and performance of previous Trinity River restoration projects (including the original pilot projects constructed in the 1990s and the Hocker Flat Demonstration Project), and channel rehabilitation projects in similar environments that have documented long-term successful performance under similar circumstances were considered (e.g., Clear Creek Restoration Project).

- Implementation – Practical execution, including potential public acceptance issues, permitting, and land use issues were considered. Constructability and complexity of maintaining the rehabilitation site over time were also considered.
- Environmental – Benefits and impacts to environmental resources with emphasis on special-status species, including native anadromous salmonids, were considered. The impacts considered included both short-term construction-related impacts and long-term maintenance impacts associated with TRD flow releases. Aquatic habitat, jurisdictional wetlands, accessibility, and conflicting land uses were considered in the type and location of proposed activities.
- Cost – The relative cost for each alternative, including construction and revegetation costs were considered. Cost was used to identify alternatives that were significantly out of proportion with other alternatives.

An interdisciplinary team initially evaluated a number of alternatives for this site, in accordance with the criteria outlined above. This evaluation resulted in identifying two action alternatives to the Proposed Action. These alternatives were formulated from public input, engineering feasibility, scientific information, and professional judgment, in a manner consistent with NEPA and CEQA. A summary of the fully analyzed alternatives is presented in the following section. Analysis of the anticipated impacts associated with each alternative is presented in Chapter 3.

The initial screening process considered alternatives that met the requirements discussed in Section 1.7. These considerations included flow regimes (seasonal and inter-annual), the potential for resource impacts, and engineering limitations. This preliminary list of alternatives incorporated input provided during meetings with various land owners and interested agencies, and culminated with input received during the CEQA scoping process.

The No-Action Alternative represents ongoing activities and operations and is intended to meet the state CEQA Guidelines, Section 15126.6, subdivision (e)(2) for existing conditions which are defined as conditions that “would be reasonably expected to occur in the foreseeable future if the project were not approved” (CELSOC 2002). As previously discussed, the No-Action (No-Project under CEQA) Alternative is based on implementation of the ROD. In particular, the hydrologic elements authorized in the ROD will be used as the existing condition (environmental baseline). The No-Action Alternative is described in Section 2.6.

2.4 Project Setting

The Indian Creek Rehabilitation Site encompasses 323 acres. The project boundary begins just downstream of the intersection of Steelbridge Road with SR 299, and extends downstream on either side of the Trinity River, ending at the Douglas City Bridge (Figures 2.1a and 2.1b). The project location encompasses several of the sites originally identified in the ROD; however, the site evaluated in this EA/DEIR has been expanded from the original site boundary to correspond to the boundaries shown on Figures 2.1a and 2.1b. For orientation and description purposes, references to river left and river right assume an observer is looking downstream. The Trinity River essentially divides the project boundary into two discrete sections, river left and river right. For readability, the EA/DEIR will use these references to river left and river right throughout the remainder of this document.

The community known as Douglas City encompasses the Indian Creek site as well as the outlying rural areas along the Trinity River, Reading Creek, and Weaver Creek. Prior to the construction of the TRD in the 1960s, these rural areas were subject to periodic floods and were influenced by mining, logging, and agricultural activities dating back to the 1850s. The first gold discovery in Trinity County occurred at the mouth of Reading Creek in 1848, and mining activities played an important role until the 1920s (Jones 1981). Union Hill played a predominant role in the development and settlement patterns in the Douglas City area. Early placer mining occurred on the bars, floodplains, and terraces of the Trinity River, Indian Creek, and Weaver Creek. The discovery of gold in Union Hill Gulch resulted in the construction of a sophisticated water conveyance system from Grass Valley Creek. This system included more than 15 miles of ditch, an inverted siphon that crossed the Trinity River on a steel bridge (hence Steelbridge Road), and a 4- by 6-foot tunnel that delivered water up the hill to the excavations in Union Hill Gulch. Over time, the hydraulic tailings affected the ability to operate this mine, and a tunnel was constructed to export the tailings to the floodplain of the Trinity River near the mouth of Weaver Creek.

In addition to the Union Hill Mine, three large alluvial features are of interest in terms of the geography and geomorphology of this area. At the upstream end of the project boundary, Ferry Bar was an alluvial feature that was named for the Shrader Ferry. In later years, the Vitzhum Ranch encompassed more than 70 acres of productive bottom lands and extended downstream to Trinity Bar (Jones 1981). Downstream of Indian Creek, a 50-acre feature known as Texas Bar was actively mined for a number of years using water supplied by diversions on Indian Creek. Texas Bar eventually became part of the Bill Fitzhum Ranch. The large red barn on the south side of SR 299 downstream of Indian Creek was part of this ranch.

The extensive tailing deposits in the lower section of the Indian Creek site provide evidence of the bucket-line dredges that operated along the Trinity River in the early to mid-1900s. These dredges severely altered the bed and banks of the Trinity River prior to the construction of the TRD and converted the fertile floodplains to large piles of tailings on either side of the river. Although dredge activity substantially modified the morphology of the channel between the valley walls, unregulated flows continued to provide the geomorphic elements necessary to maintain a meandering channel typical of a normally functioning alluvial river (USDA Forest Service 1995).

The construction and operation of the TRD resulted in a dramatic change in the flow regime of the Trinity River downstream of Lewiston Dam. One of the fundamental changes in the river between Lewiston and Helena was the formation of riparian berms along the river, which became “fossilized” over time. These berms are large deposits of fine sediment anchored by well-established riparian communities. These berms have essentially handcuffed the river, affecting its ability to maintain the alternate bar sequence in the affected reach, as well as influencing the deltaic deposits at the confluence of tributaries (i.e., Indian Creek and Weaver Creek). These changes are discussed in detail in the FEIS/EIR and the ROD.

2.5 Description of Project Site

This EA/DEIR identifies 17 discrete activity areas within the site boundary defined for the Proposed Action. The type, extent, and level of activity at these activity areas may be different, depending on the alternative. These areas were defined by the interdisciplinary design team to include riverine areas, upland areas, access areas (roads and river crossings), and construction support areas. These activity

Path: R:\Projects\10010 Mechanical Channel Rehab Sites on Mainstem Trinity River\GIS\Site-Indian_Creek\10010_IndianCk_Fig_2_1a_Activity_Areas.mxd Source: NSR, Inc.; USBR; USGS 05-25-06 bmoore

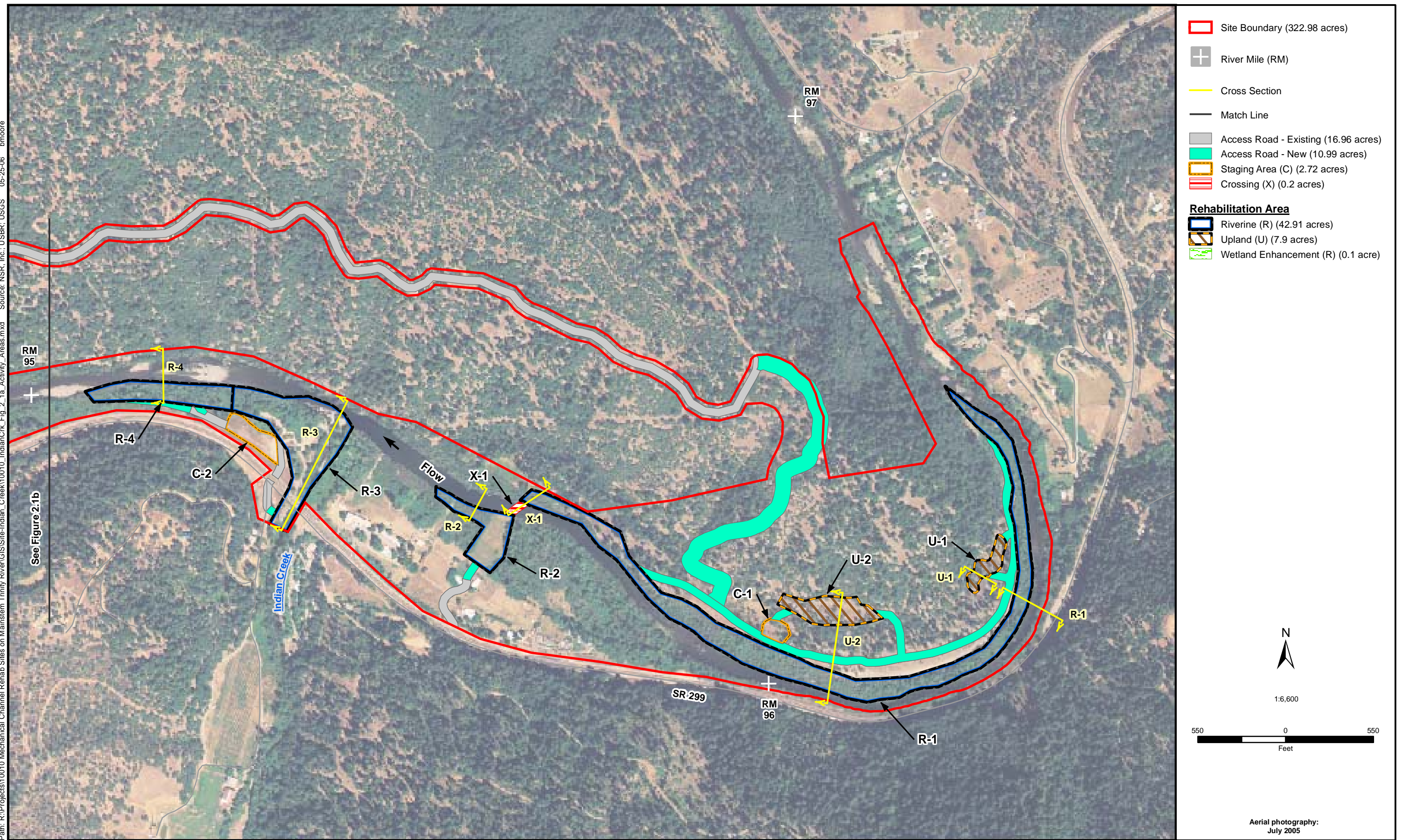


Figure 2.1a
Activity Areas

Path: R:\Projects\10010 Mechanical Channel Rehab Sites on Mainstem Trinity River\GIS\Site-Indian_Creek\10010_IndianCk_Fig.2.1b_Activity_Areas.mxd Source: NSR, Inc.; USBR; USGS 05-25-06 bmoore

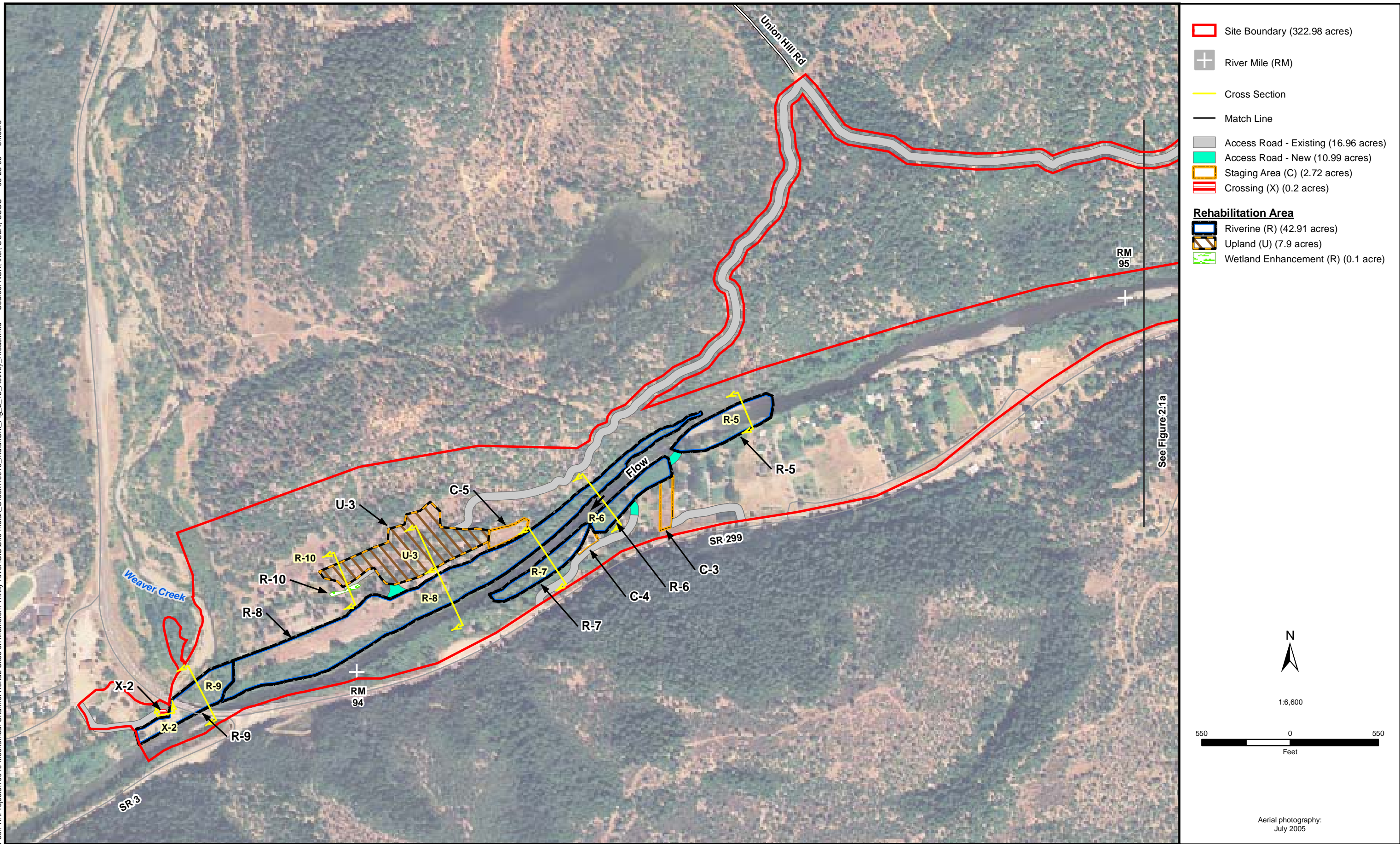


Figure 2.1b
Activity Areas

areas are labeled as “riverine – R”; “upland – U”; and “construction use/staging – C.” Additional activity areas are labeled as roads or crossings. Figures 2.1a and 2.1b illustrate these activity areas and their relationship to the Trinity River. Table 2-1 identifies the activity areas, shows their size (acres), quantifies the treatment area (acres), indicates location relative to the Trinity River (river right/left), and provides a general characterization of the existing geomorphic features at each site. The activity/treatment areas described in the following section provide the basis for calculating the acreage of the impacts described in Chapter 3.

TABLE 2-1

INDIAN CREEK ACTIVITY AREAS { TC "Table 2-1 Indian Creek Activity Areas" \f B \l "1" }

Activity Area	Activity Area Size (acres) ^a	Treatment Area (acres) ^a	River Right/Left	Geomorphic Features
R-1	12.47	5.42	Right	Functional riparian berm, minimal floodplain
R-2	2.12	1.40	Left	Minimal floodplain
R-3	6.12	2.18	Left	Indian Creek delta, minimal floodplain
R-4	2.55	0.84	Left	Functional riparian berm
R-5	2.34	1.78	Left	Island, elevated point bar
R-6	1.51	1.21	Left	Floodplain
R-7	1.54	0.50	Left	Minimal floodplain
R-8	12.09	11.96	Right	Functional riparian berm, side channel, floodplain
R-9	2.17	2.11	Right	Weaver Creek delta
R-10	0.10	0.10	Right	Wetland, tailings deposit
U-1	0.77	0.77	Right	Terrace, floodplain
U-2	1.90	1.90	Right	Terrace, floodplain
U-3	5.23	5.23	Right	Terrace, upland hillslope
X-1, X-2	0.15		Right/Left	Trinity River, Weaver Creek crossings
Existing Roads	16.96	16.96	Right	N/A
New Roads	11.01	11.01	Right	N/A
C-1	0.44	0.44	Right	N/A
C-2	1.00	1.00	Left	N/A
C-3	0.54	0.54	Left	N/A
C-4	0.22	0.22	Left	N/A
C-5	0.52	0.52	Left	N/A

^a Area calculated from project GIS

The following section provides a brief discussion of the various activity areas in terms of location, ecological setting, and site-specific objectives.

2.5.1 RIVERINE ACTIVITY AREAS – R

The riverine activity areas for the site were delineated through an interdisciplinary process. This process included consideration of the mechanical rehabilitation objectives outlined in the FEIS, the existing site conditions (biology, land ownership, engineering feasibility, and environmental constraints), and the ability to integrate the project into the overall AEAM process established by the TRRP. The functionality of the aquatic system was considered, as well as the information available on jurisdictional waters (i.e., wetlands) that occur within the boundary of the site. The riverine activity areas discussed in this section are described in terms of existing geomorphic features and functional objectives. Figures 2.1a and 2.1b illustrate these activity areas. Removal of vegetation and excavation (cut) of alluvial material are incorporated into the Proposed Action, Alternative 1, and Alternative 2. This information provides the foundation for the activities described in the following sections.

The activities included in the Proposed Action, Alternative 1, and, to a lesser degree, Alternative 2, emphasize selectively removing fossilized riparian berms (berms that are anchored by extensive woody vegetation and consolidated sand deposits) and reconnecting the river's floodplain with the river at intermediate flows (between 450 and 6,000 cfs). These riparian berms developed after the TRD was completed as a result of the loss of scouring associated with peak flows. Removing the berms and vegetation at strategic locations will promote the river processes necessary for the restoration and maintenance of Trinity River alternate bars, thereby enhancing salmonid rearing habitat. In conjunction with berm removal and floodplain rehabilitation, the action alternatives include construction of alcoves and off-channel habitat that would be available to juvenile salmonids and other aquatic organisms over a range of flows. This project also includes excavating and/or recontouring deltaic and mid-channel deposits in order to enhance the alluvial features (i.e., point bars) within the Trinity River.

The TRRP has developed a number of programmatic objectives for channel rehabilitation projects. The following objectives are applicable to the riverine activity areas included in the action alternatives.

Objectives for Riverine Activity Areas

The following are the objectives for the riverine activity areas:

- Reactivate floodplain to facilitate river-induced sinuosity that results in complexity of floodplain habitat.
- Establish conditions such that the ROD flow regime will scour the alluvial surfaces to prevent re-establishment of riparian vegetation below the designed floodplain elevation and deter riparian encroachment on these surfaces.
- Recruit riparian vegetation onto the 1.5-year recurrence interval floodplain and the upper floodplain surface that are not subject to high-flow scouring.
- Develop a sequence of point bars and encourage lateral migration into the bank at flows >6,000 cfs (1.5-year recurrence interval/bankfull discharge).
- Develop low water alcoves at the base of side channels that function at design flows (1,000 cfs to >6,600 cfs). The low water alcove will contain water all year and be maintained by the high-flow channel.
- Develop a side-channel that will flow at 1,000 cfs.

- Develop high-flow scour channels that will run at flows $\geq 6,000$ cfs.
- Recruit riparian vegetation onto the 1.5-year recurrence interval floodplain.
- Increase the area, quality, and availability of rearing habitat for anadromous salmonids (specifically fry and juvenile life stages) over a range of flows.
- Increase structural complexity of the types of habitat available and thereby increase the range of anadromous salmonid life history stages that can be supported.
- Increase the quality and quantity of habitat for foothill yellow-legged frog (all life stages).
- Reduce the occurrence of noxious and invasive plant species (e.g., Himalayan blackberry and yellow star thistle [*Rubis discolor* and *Centaurea slostitialis*]).

2.5.2 UPLAND ACTIVITY AREAS – U

The objective for all upland activity areas within the project boundary is to establish a suitable location for disposal of excavated material (i.e., sand, gravel, cobble, and cleared vegetation) and, to a reasonable extent, encourage reestablishment of native upland vegetation. Additionally, the activities occurring at these areas will include measures to inhibit the introduction and spread of noxious and invasive vegetation, notably Himalayan blackberry and yellow star thistle. Specific design criteria were established for these upland areas. The criteria include placing material in locations above (outside of) the 100-year floodplain elevation to minimize impacts to Federal Emergency Management Agency (FEMA) base flood elevations (BFE), using existing topographic features to reduce observable changes (line and form of tailing piles) in material fill areas, and identifying locations that would not inhibit future land use activities (e.g., recreation access, parking).

Figures 2.1a and 2.1b illustrate the upland areas that will be available for placement of excavated materials (fill). Table 2-1 provides additional information on the location and setting of these areas. These areas are associated with either alluvial terraces, constructed tailing deposits placed during the bucket-line dredge operations prior to World War II, or upland landforms that were exposed during historic mining activities. Currently, the lack of soil development in these depositional environments inhibits recruitment and survival of native vegetation to varying degrees. The placement of excavated material at these areas is expected to result in more favorable vegetation recruitment and survival. At the discretion of Reclamation, the use of specific upland activity areas may be modified to facilitate removal and transport of alluvial materials to locations authorized for processing with an approved use permit pursuant to Trinity County's Zoning Ordinance (Ordinance No. 315).

2.5.3 STAGING/ACCESS AREAS – C

The project includes a number of staging and access areas, as shown in Figures 2.1a and 2.1b. These areas are required for temporary construction activities, including storage of equipment and materials, temporary placement of topsoil, and placement of necessary sanitation facilities. At the completion of the project, specific remediation measures will be performed in accordance with realty agreements with individual landowners.

Access to activity areas will be provided through a network of routes necessary for the full range of vehicular traffic. Figures 2.1a and 2.1b illustrate these access routes relative to the various activity areas.

2.5.4 ROADS

A network of existing roads and trails has been identified in addition to the access routes included in the staging areas. In cases where new roads are required, they will be constructed to the standard necessary to limit resource impacts, specifically erosion and runoff. Existing roads will be evaluated and upgraded as necessary to provide the necessary access. New roads will be decommissioned at project completion when requested by the landowners.

2.5.5 CROSSINGS

Activity areas on the right side of the Trinity River may be accessed via crossings constructed on the Trinity River and Weaver Creek. These crossings are intended to provide vehicular and equipment access during low-flow conditions in the Trinity River (approximately 300–600 cfs). Two crossings will incorporate design specifications appropriate to address resource impacts identified in Chapter 3 of this EA/DEIR.

Both crossings will consist of a constructed ramp of alluvial materials with a running surface approximately 20 feet wide. Suitably sized culverts may be used at the mouth of Weaver Creek to create a dry crossing. Alluvial materials will be sized appropriately to ensure stability of the crossing and provide a useable surface for vehicular traffic. Minor amounts of excavation on either side of the low-flow channel may be required to provide safe ingress and egress to the crossing.

2.6 *Description of Alternatives*

This section describes the No-Action Alternative, the Proposed Action, Alternative 1, and Alternative 2, all of which are analyzed in this EA/DEIR. The Proposed Action most efficiently meets the purpose and need/project objectives outlined in Chapter 1. Alternatives 1 and 2 are considered feasible and represent approaches that would avoid or substantially lessen at least one of the significant environmental impacts of the Proposed Action. The alternatives selected for evaluation and assessed in this document represent a reasonable range of alternatives that will provide for meaningful public participation and informed decision-making.

2.6.1 REHABILITATION ACTIVITIES

The Proposed Action encompasses 15 specific activities within the activity areas described in Table 2-1. The types of activities are shown in Table 2-2. The activity types proposed for each area are common to all action alternatives, depending on the specific location and objectives. In addition to the activities included in Table 2-2, several others are common to all activity areas, to varying degrees. These common activities—vegetation removal, watering, and monitoring—are briefly discussed at the end of this section.

The rehabilitation activities are discussed in general terms and each activity is assigned a label using an alpha system, as shown in Table 2-2. These activities form the basis for comparing the alternatives. These activities also provide the framework for the impact analysis provided in Chapter 3. For each action alternative, a table has been prepared that provides an overview of the types of activities proposed. If additional activities are required for one or more of the alternatives, these activities are incorporated in the description of the alternative.

TABLE 2-2
INDIAN CREEK REHABILITATION ACTIVITIES{ TC
 "Table 2-2 Rehabilitation Activities" \f B \l "1" }

Label	Activity Type
A	Recontouring
B	Berm removal
C	Constructed floodplain (2,000 cfs)
D	Constructed floodplain (4,500 cfs)
E	Side channel (1,000 cfs)
F	High-flow side channel (6,000 cfs)
G	Alcove (450 cfs, 6,000 cfs)
H	In-channel bar and bank excavation (450 cfs)
I	Delta excavation
J	Placement of excavated materials
K	Staging/use areas
L	Roads, existing
M	Roads, new
N	Crossings (Trinity River, Weaver Creek)
O	Revegetation

The following discussion describes the types of activities included in the Proposed Action and provides a general overview of the specific elements included in each activity.

Activity A (Recontouring)

- Modify the ground surface to enhance existing topographical features and minimize risk of stranding of juvenile salmonids. Recontouring will not result in the need to move material from the activity area and will result in a balanced cut and fill (no net excavation or fill). Recontouring will be accomplished using heavy equipment (i.e., excavator, bulldozer, and scraper dump trucks).

Activity B (Riparian Berm Removal)

- Strip earthen materials from areas to be excavated and slope river bank back from the low-flow water's edge. Excavation will be accomplished using heavy equipment (i.e., excavator, bulldozer, and scraper dump trucks). Estimated depth of excavation is not expected to exceed 6 feet.

Activities C and D (Floodplain Construction – 2,000 cfs, 6,000 cfs)

- Floodplain activities are those that lower the floodplain or the river's edge to be in communication with the river at prescribed flows. These activities include lowering of historic floodplains (which are now terraces above the river) so that they are frequently inundated again. Vegetation will be cleared and earth excavated to meet design elevations for periodic inundation (2,000 cfs bench, and 1.5-year flow [approximately 6,000 cfs] bench). Floodplains will be constructed to ensure submergence by 6 to 12 inches of water at designated river flows.
- The 2,000 cfs bench will be excavated to provide 6 to 12 inches of inundation during river flows

of 2,000 cfs. These treatment areas will provide important rearing and slow-water habitat during outmigration of salmonids. They will also provide low points that may allow the river to move (meander) and thereby provide the historical habitat variability required to support rapid growth of native fishes.

- The 1.5-year recurrence flow below Grass Valley Creek is approximately 6,000 cfs. Consequently, the 1.5-year constructed floodplain will be 6 to 12 inches deep at 6,000 cfs. Initially, these treatment areas will rely on natural recruitment of native riparian vegetation. It is anticipated that these areas may revegetate with a diverse assemblage of native vegetation, or they will be revegetated in a patchy mosaic as topographical diversity and vegetation cover develop over time.

Activities E and F (Side Channels – 1,000 cfs, 6,000 cfs)

- Modifications to existing topographic features (side channels) will reconnect the Trinity River with its floodplain at targeted flows. Side channels constructed for 1,000 cfs flows will provide off-channel, low-velocity habitat for a variety of aquatic organisms, including juvenile salmonids. Side channels constructed to convey flow at 6,000 cfs will provide similar benefits to aquatic organisms, but will be limited by the frequency and duration of these flows.
- Side channels will be constructed to leave a small berm at the upstream and downstream ends to minimize impacts to water quality during construction. These small berms will be removed by equipment at the end of construction or left in place for removal by subsequent high flows.

Activity G (Alcove – 450 cfs, 6,000 cfs)

- Excavate to design elevations at the downstream end of side channels (1,000 cfs, 6,000 cfs). These areas will be continuously inundated (approximately 1–2 feet deep at low-water construction). Constructed alcoves will provide year-round juvenile fish habitat and will be maintained as associated high-flow channels route water through them. Alcoves may function under various flow regimes, depending on local hydraulic conditions.

Activity H (In-Channel Bar and Bank Excavation)

- Modifications to existing topographic features on the mid-channel bar/island will reestablish the mid-channel bar, while moderating the erosional impacts to the left bank of the Trinity River. This feature functions as an island during low flows; as flows increase, it functions more like a bar. Reducing the elevation of this bar/island will provide additional habitat for spawning/rearing salmonids under a wider range of flows.
- Material excavated from this alluvial feature will be placed in a manner to reestablish alluvial processes on site and immediately downstream (induced meander)

Activity I (Delta Excavation, Indian Creek and Weaver Creek)

- Modifications to existing topographic features (delta deposits) will reestablish the functional deltaic environment by allowing the tributaries to migrate in response to changes in flow and sediment regimes from tributaries and the mainstem Trinity River. In addition to the ecological benefits, this activity has the potential to decrease long-term impacts to SR 299 bridges over Indian Creek and the Trinity River by reducing BFEs at these locations.

Activity J (Placement of Excavated Materials)

- Excavated materials will be moved (often out of the 100-year floodplain) so that there will be no increase in the elevation of the 100-year flood (BFE). Spoiled materials will be carefully spread in uniform layers. Earthen materials will be spread to reasonably even and uniform surfaces that blend with the natural terrain. Depending on land-owner requests, replanting may occur. In general, revegetation, beyond the seeding of open spoils areas, will rely on natural recruitment. However, revegetation will be enhanced at specific locations as required to address impacts described in Chapter 3.

Activity K (Staging/Use Areas)

- Transport excavated material in order to retain as much fine-grained material as possible for capping of the stockpile area.
- Apply water for construction purposes, including dust abatement, as directed by the Contracting Officer.

Activity L and M (Roads, Existing and New)

- Existing roads will be utilized to access activity areas. Existing roads within the project boundary include SR 299, Union Hill Road, River Ranch Road, and Riverview Road. Individual road segments may be utilized for one or more activities (e.g., access for equipment and personnel, removal of material, revegetation efforts, and monitoring activities).
- The location of activity areas will require construction of new roads for specific project purposes. These roads will be located to connect activity areas in a manner that minimizes impacts to the resources described in Chapter 3.

Activity N (Crossings, Trinity River and Weaver Creek)

- The Trinity River crossing will provide access to the upstream activity areas on the right side of the river. This crossing will provide vehicular access for heavy equipment (e.g., excavator, trucks, scrapers, service vehicles). It will be constructed as a submerged fill using alluvial materials excavated from riverine activity areas. Due to requirements to retain navigation capability and minimize impacts to aquatic organisms, the crossing will be submerged under low flow conditions (submerged under 1½ feet of water in the thalweg). This crossing will require some vegetation removal in order to ensure a safe entrance and exit to the channel.
- The Weaver Creek crossing will provide access to the downstream activity areas on the right side of the river. This crossing will provide vehicular access for heavy equipment (e.g., excavator, trucks, scrapers, service vehicles). Depending on flow conditions, alluvial material will be used to provide a stable crossing under the Douglas City Bridge. To minimize impacts to aquatic organisms, the crossing will be constructed in a manner that ensures unimpeded passage for salmonids.

Activity O (Revegetation)

- Impacts to vegetation will occur in all activity areas. Initially, revegetation will rely primarily on natural recruitment of native species; however, specific plans will address site-specific landowner

requests and fish and wildlife requirements. Planting may also be used as a tool to control or inhibit the reestablishment of noxious and invasive species.

Common Activities

Three activities are common to all activity areas: vegetation removal, water use, and monitoring. The locations and magnitude of these activities will be specific for each activity within the project boundary.

Vegetation Removal

- Clear rights-of-way for work areas and those required to access work areas using a combination of manual labor and heavy equipment (i.e., chainsaw, excavator, and bulldozer).
- Remove the majority of stumps, roots, and vegetative matter to reduce opportunity for re-colonization of riparian vegetation. Some large woody debris (LWD) is planned for use in the floodplain to serve as habitat for juvenile salmonids.
- Cleared and grubbed vegetation may be disposed of by burying within spoils areas, chipping, hauling offsite, burning, or other appropriate methods.
- Preserve and protect vegetation designated for preservation within clearing limits and vegetation outside clearing limits.
- Mechanically remove submerged roots from river fringe areas by using ripping bars set to about 16 inches deep or with excavator bucket. Equipment bodies (tires, tracks) will remain outside of the river when removing submerged roots.

Water Use

- Apply water for dust abatement, as directed by the Contracting Officer. Dust abatement water will be obtained from on-site seep wells or the Trinity River. When drafting from the Trinity River, pump intakes will be in conformance with criteria established by NMFS and CDFG to prevent impacts to aquatic organisms. Make-up water pumped from the river will pass through a screen at the inlet with maximum ¼-inch openings and a maximum intake velocity of 0.8 feet per second.
- In the event irrigation is necessary for revegetation efforts, the primary water source would be the Trinity River. Pump intakes will be in conformance with criteria established by NMFS and CDFG to prevent impacts to aquatic organisms. Make-up water pumped from the river will pass through a screen at the inlet with maximum ¼-inch openings and a maximum intake velocity of 0.8 feet per second.

Monitoring

- Physical habitat will be surveyed to quantify physical changes over time.
- Floodplain water velocities will be measured to determine habitat suitability for juvenile fishes.
- Newly created floodplains will be monitored to determine the extent of their use by fish and amphibians (yellow-legged frogs) during inundation.

2.6.2 NO-ACTION ALTERNATIVE

Under the No-Action (No-Project) Alternative, Reclamation and Trinity County would not proceed with the Proposed Action, although other activities authorized in the ROD for the FEIS will be implemented. The No-Action Alternative reflects the existing Indian Creek site condition within the boundary established for the Proposed Action. Section 2.5 describes the setting and characterizes the existing geomorphic features that will remain under the No-Action Alternative. Under the No-Action Alternative, the mechanical channel rehabilitation measures described in the FEIS would not occur. No activities would be conducted other than those authorized under the ROD (flow measures).

2.6.3 PROPOSED ACTION

The Proposed Action would include activities throughout the project site on either side of the Trinity River. These activities are expected to eventually result in the development of point bars and floodplain habitat that do not presently exist. The response time will be dynamic and subject to external forces once the activities have been completed. Creation of these features would be accomplished through the rescaling of the river channel and floodplain within the riverine rehabilitation areas, although there is an expectation that natural alluvial processes may immediately affect a larger area. Modifications to the deltas of Indian Creek and Weaver Creek will also assist in reestablishing the alluvial processes and interactions at these locations. This rehabilitation of river function could result in the rapid development of a larger and more complex expanse of river and floodplain habitats. The result of habitat expansion would be increased habitat suitability and availability for salmonids and other native fish and wildlife species. The Proposed Action includes in-channel activities, specifically excavation of a mid-channel bar (R-5) and constructed low-flow crossings of the Trinity River (X-1) and Weaver Creek (X-2). The constructed crossings will provide vehicular access for heavy equipment to activity areas on the right side of the river (i.e., R-1, R-8, R-9, R-10, U-1, U-2, U-3, C-1, C-2, C-3, C-4 and C-5). Figures 2.2a and 2.2b illustrate activities proposed under the Proposed Action.

Under the Proposed Action, activities proposed for riverine treatment areas would result in the excavation of approximately 91,500 cubic yards of material. Riverine activities on the right side of the Trinity River will use adjacent areas (U-1, U-2, and U-3) to dispose of excavated materials within the project boundary. Activity areas on the left side of the river are located on private lands and are subject to space limitations because of the narrow space between the river and SR 299. The nature and areal extent of riverine treatments in activity areas R-2, R-3, R-4, R-5, R-6 and R-7 preclude the ability to establish upland disposal areas (U) on the left side of the river within the project boundary. Excavated material will be transported to an off-site location in compliance with federal, state, and local requirements.

The premise of the Proposed Action is that it would use the suite of rehabilitation activities to modify the type and/or character of aquatic, riparian, and upland habitat in a manner that incorporates an understanding of the functional relationships and natural processes of an alluvial river. The modifications proposed are designed to enable the river to move in the direction of an alluvial river, but rely on the river itself to modify its own form and function over time.

The lead agencies acknowledge that projects of this nature have a high degree of uncertainty in terms of the type and degree of change that may occur. The inherent variability in the flow regime would control

the rate and magnitude of change. Activities A through I are intended to increase the potential for the river to meander (migrate) out of the channel in which it has been confined by historic dredging activities and, more recently, by riparian berms. In addition to the immediate changes to the channel (e.g., berm removal, floodplain excavation,), the Proposed Action would increase the likelihood that the Trinity River would reflect more of the Healthy River attributes of an alluvial river. A full discussion of the Healthy River attributes is provided in Section 3.3 of this document.

Activities E, F, and G are intended to create off-channel habitat that would provide refuge during high flows (e.g., velocity). The side channels, alcoves, and modified deltas would also provide additional complexity to the riverine environment. All of these activities are consistent with the Healthy River attributes.

Activities J through M are associated with the transfer, placement, and stabilization of material excavated from the riverine areas. Activity N crossings (activity areas X-1 and X-2) provide a reasonable method to access the activity areas on the right side of the river. R-10 has been included as a riverine activity; however, the objective at this location is to enhance wetland habitat by reestablishing a hydrologic connection between two emergent wetlands. These wetlands are artifacts of bucket-line dredge operations. Excavation of a minimal amount of tailing deposits is expected to reestablish wetland hydrology at this location, providing opportunities for expanding the functional area of these features.

Monitoring is a required element of the Proposed Action and responds to the TRRP program management objectives, as well as the elements of the Mitigation, Monitoring and Reporting Plan required pursuant to the CEQA Guidelines.

Table 2-3 summarizes the types of activities that would occur as part of the Proposed Action.

In addition to the common activities previously discussed, the following elements are included in the Proposed Action.

Functions and values will be developed that will encourage revegetation above the 1.5-year recurrence flow elevation. Natural vegetation, in combination with planting, will minimize any short-term losses of riparian vegetation and its associated habitat. The actual amount of revegetation included in the Proposed Action will be determined upon completion of final grading activities. As proposed, most revegetation activities will be restricted to those floodplain and side-channel features that would become minimally inundated at flows $\leq 6,600$ cfs (1.5-year return interval flood). As appropriate, all activities will include specific measures intended to limit or prohibit reintroduction of noxious and invasive plant species. The spread of noxious, invasive, and exotic plant species within the project boundary will be controlled by implementing excavation and disposal activities in a manner that maximizes control of seed and root-sprout sources and reduces the potential for non-native plant infestation (e.g., burial).

Design Elements

The following elements are common to the Proposed Action, Alternative 1, and Alternative 2. These design elements are not described again in the specific descriptions of Alternative 1 and Alternative 2.

Path: R:\Projects\10010 Mechanical Channel Rehab Sites on Mainstem Trinity River\GIS\Site-Indian_Creek\10010_IndianCrk_Fig. 2.2a_Proposed_Rehab_Areas.mxd Source: NSR, Inc.; USBR, USGS 05-25-06 bmoore

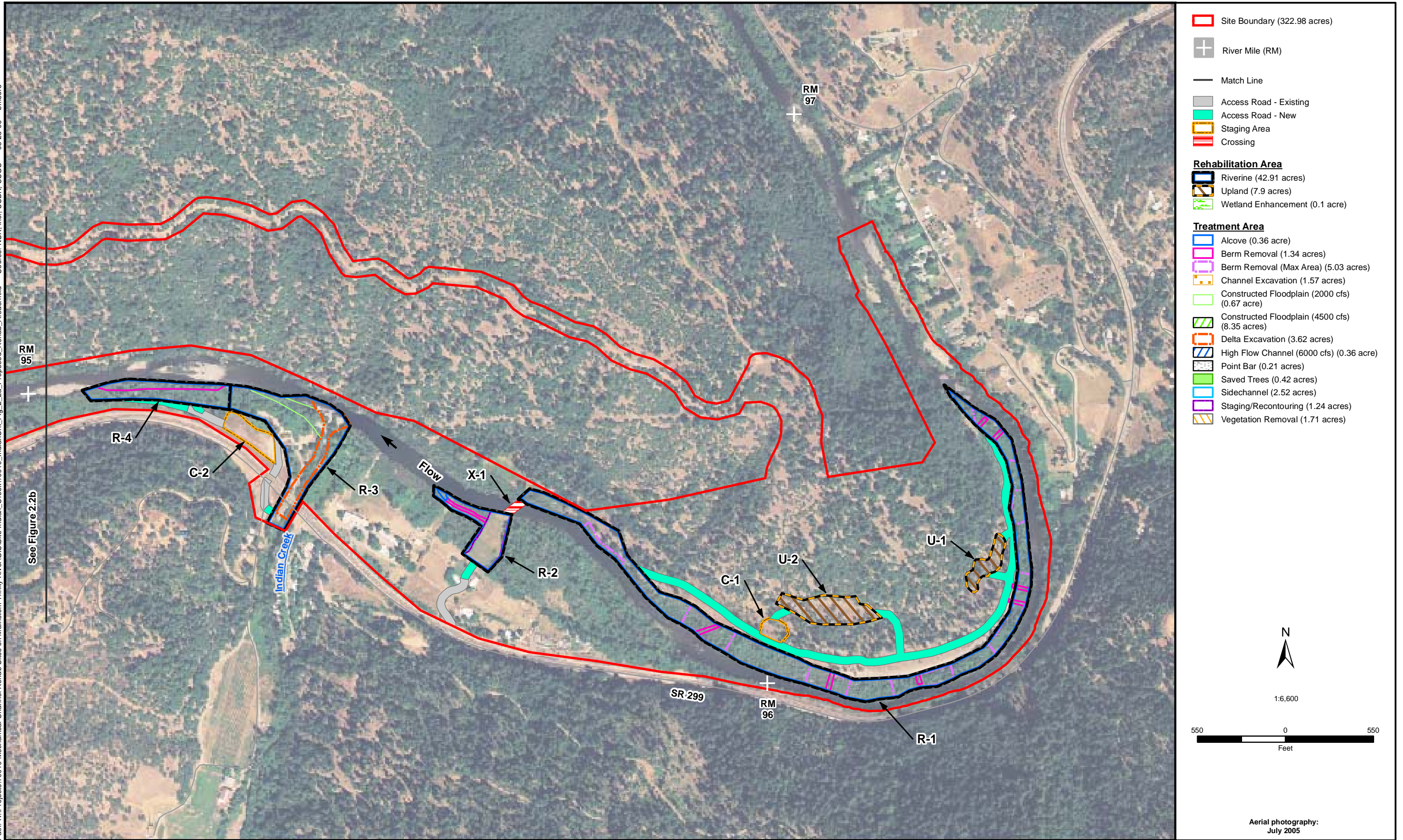


Figure 2.2a
Proposed Action Rehabilitation Areas

Path: R:\Projects\10010 Mechanical Channel Rehab Sites on Mainstem Trinity River\GIS\Site-Indian_Creek\10010_IndianCk_Fig. 2.2b_Proposed_Rehab_Areas.mxd Source: NSR, Inc.; USBR, USGS 05-25-06 bmoore

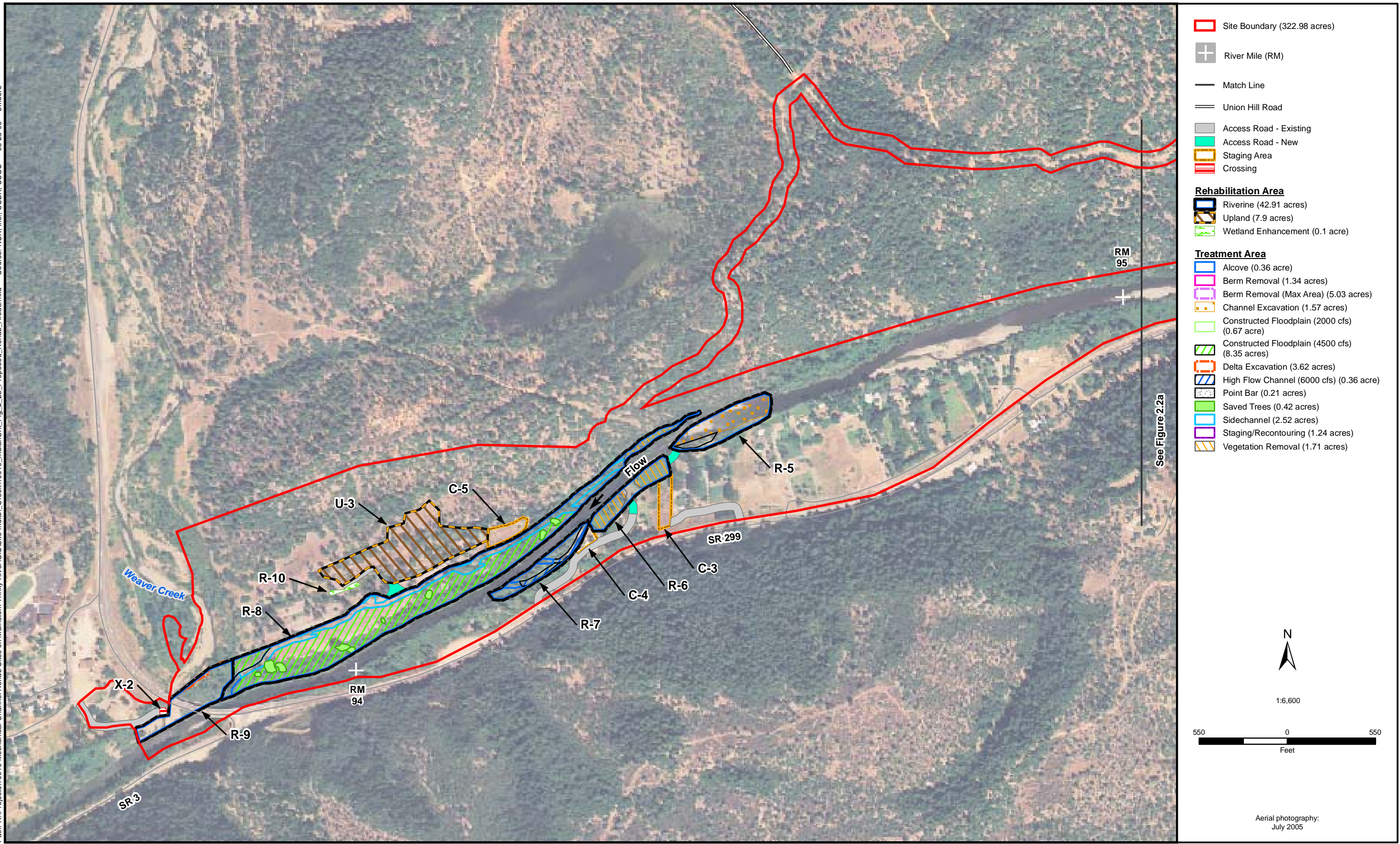


Figure 2.2b
Proposed Action Rehabilitation Areas

TABLE 2-3

SUMMARY OF PROPOSED ACTION – ACTIVITY AREAS{ TC "Table2-3 Summary of
Proposed Action—Activity Areas" \f B \l "1" }

Activity Area (Acres)	Treatment Area (acres) ^a	Volume (cubic yards) ^b	Potential Activity
R-1 (12.47)	5.42	30,000	B
R-2 (2.12)	1.40	900	A, B, G
R-3 (6.12)	2.18	5,500	C, I
R-4 (2.55)	0.84	4,300	B
R-5 (2.34)	1.78	700	H
R-6 (1.51)	1.21	0	Vegetation removal
R-7 (1.54)	0.50	2,100	E, G
R-8 (12.09)	11.96	80,000	D, F, G
R-9 (2.17)	2.11	12,000	I
R-10 (0.10)	0.10	500	Excavate tailings
<i>Subtotal R</i>	<i>27.50</i>	<i>136,000</i>	
U-1 (0.77)	0.77	16,000	J
U-2 (1.90)	1.90	14,000	J
U-3 (5.23)	5.23	92,500	J
X-1, X-2 (0.20)	0.20	500	Trinity River, Weaver Creek Crossings
<i>Subtotal U & X</i>	<i>8.10</i>	<i>123,000</i>	
Existing Roads (3.50)	3.50	N/A	L (0.63 miles)
New Roads (5.68)	5.68	N/A	M (1.56 miles)
C-1 (0.44)	0.44	N/A	K
C-2 (1.00)	1.00	N/A	K
C-3 (0.54)	0.54	N/A	K
C-4 (0.22)	0.22	N/A	K
C-5 (0.52)	0.52	N/A	K
<i>Subtotal C</i>	<i>2.72</i>	<i>N/A</i>	

^aArea calculated from project GIS

^bProvided by TRRP

Hydraulics

The Proposed Action would occur in part of an area that FEMA has designated as Special Hazard Zone AE and X, as described in Section 3.4. Based on this information, Reclamation established a design criterion stating that not only would the County's floodplain ordinance be followed, but implementation

of any action alternative would not increase the flood risk for the community. This criterion resulted in a stipulation that excavated material would be strategically placed to ensure that 100-year flood elevations in Zones AE and X would not increase over current conditions. As previously described, the site boundary on the left side of the river precludes any opportunities to dispose of excavated materials between SR 299 and the Trinity River. All materials excavated from river left activity areas will be transported to an approved commercial facility off site permitted with an approved use permit pursuant to Trinity County's Zoning Ordinance.

The Proposed Action and Alternative 2 include crossings on the Trinity River and Weaver Creek. The flood risk design criterion was applied to these crossings to ensure that private property and public infrastructure would not be adversely affected.

The design of the activity areas was based on an understanding of the relationships between the flow regime and the hydrologic/hydraulic characteristics of the action alternatives. A fundamental constraint was to *do nothing to increase the flood risk in the general vicinity, and to not raise the water surface elevation by more than 1 foot above the current FEMA estimated 100-year flow*. Evaluation of these alternatives required comparing estimated seasonal base flows and estimated return-period flows. The Corps' Hydraulic Engineering Center River Analysis System (HEC-RAS) hydraulic model was developed and used by the design team and calibrated with known water-surface elevations (WSEs) and flows at various points along the project reach for the design flow of 6,000 cfs. Table 2-4 lists the components of the flow regime, the seasonal or other periodic return intervals, and the flow rates that were used to evaluate the action alternatives.

The HEC-RAS model was developed and calibrated to match measured WSEs in the Trinity River within and adjacent to the site boundary for the design flow. Since no WSEs are known for the 100-year flow, the predicted WSEs are based on the output of the model using carefully selected Manning's "n" values that reflect the overbank conditions at each activity area. The model incorporates empirical data from surveyed cross-sections, including bathymetric and overbank/floodplain topography in the general vicinity of the project site. To obtain WSEs for design flows, the model was calibrated using surveyed water-surface elevations and known flows (from gage data). The model was determined to be adequate/very accurate for the level of evaluation and design required.

TABLE 2-4 TC "Table 2-4 Estimated Mainstem Trinity River Flow Conditions" \f B \l "1" }
ESTIMATED MAINSTEM TRINITY RIVER FLOW CONDITIONS USED FOR ALTERNATIVE DESIGNS

Flow Description	Flow Event	Flow Rate (cfs)
Summer base flow ^a (July 22 to October 15 of each year)	Q _s	450
1.5-year return interval design flow	Q _{1.5}	6,000
Estimated FEMA 100-year flow below Indian Creek	Q ₁₀₀	29,000 ^b
Estimated FEMA 100-year flow below Weaver Creek	Q ₁₀₀	22,000 ^b

^aBase flow defined as cfs from TRD release and accretion flow

^bSee Appendix G, Table 1

Q=return interval

There are two significant flow conditions that were important to the design of the action alternatives: the summertime low-flow condition of about 450 cfs, which is the release from Lewiston Dam, and the

1.5-year-event (bankfull) flow of 6,000 cfs. The design team acknowledged that design flows portrayed in Table 2-4 are considered “best available information” per FEMA requirements. The FEMA Q100 “near Douglas City” (38,500 cfs) was established in the 1976 Corps report (U.S. Army Corps of Engineers 1976) used by FEMA to develop the current flood insurance rate maps (FIRMs) for the Trinity River. The 6,000 cfs 1.5-year event is based on the ROD flow release and estimates developed by McBain and Trush, as described in Appendix G, Hydraulics. This flow information provided the basis for the designs incorporated into the action alternatives. Based on the information provided in this appendix, the lead agencies determined that the 6,000 cfs design flow would be appropriate for these alternatives. The 450 cfs flow was used to define the elevation boundary of the low-flow channel for the analysis of impacts presented in Chapter 3.

A fundamental design criterion is to inundate the designed floodplain surface with water approximately 0.5 feet deep at the proper design flow. For example, the 4,500 cfs floodplain in R-8 would be inundated with 6 inches of water during Trinity River flows of 4,500 cfs. In addition, the floodplain surfaces were designed to ensure adequate sloping of the bank toward the river to ensure drainage and minimize the opportunity for stranding juvenile salmonids.

The HEC-RAS hydraulic model was developed to calculate the required floodplain elevation and was calibrated for the existing conditions. The calibration was based on water-surface profiles surveyed at low flow, and water profiles and points surveyed at different flows, ranging up through the 6,000 cfs level. After the model was properly calibrated, floodplain elevations were assumed for the activity areas, and the design topography was substituted for the existing ground. The cross-sections at the end of this chapter illustrate this to varying degrees. Additional HEC-RAS runs were used to determine if the floodplain designs provided for inundation (6 inches of water on average). If not, the floodplain slope was changed to match the slope of the water surface in the channel, and the elevation was moved up or down so that the floodplains were properly inundated.

Roadway Approaches

The project site is in close proximity to SR 299. SR 299 parallels the left side of the Trinity River and corresponds to the southern boundary of the project. The project boundary includes small areas on the south side of SR 299 in the vicinity of Indian Creek and Weaver Creek. The Proposed Action also utilizes River Ranch Road and private driveways to access activity areas on both sides of the river, specifically the Trinity River and Weaver Creek crossings.

Drainage

As appropriate, temporary bridges or culverts would be constructed at stream crossings or cross-drainage channels to allow for unimpeded surface drainage.

Rights-of-Way/Easements

Prior to construction, formal realty agreements will be made between Reclamation, federal land managers (BLM), and private landowners whose property will be affected. These agreements will clarify terms and conditions under which contractor(s) will work on private property. In addition, these agreements will

compensate landowners, based on fair market value of identified construction easements, and will hold property owners harmless during construction activities.

Utilities

A utility corridor generally parallels the Trinity River through the project boundary, providing electrical and telephone service to the local community. Power poles and utility lines were taken into consideration, particularly in the vicinity of activity areas R-7 and R-8, to ensure no disruption of service. Additional information on utilities is provided in Section 3.17.

Construction Criteria and Methods

Construction Process Overview

The following provides a general overview of the construction process for the action alternatives. A detailed list of equipment that may be used is provided in Section 3.16, Noise.

- Vegetation removal would occur as necessary and in compliance with all regulatory requirements. An expected August 1 start date for clearing and grubbing of vegetation will allow completion of nesting by avian species. Alternatively, vegetation may be removed prior to the nesting season for special-status avian species.
- Where available, existing roads will be used to access the activity areas. New access roads and haul routes will be constructed when necessary, and restored to a stable condition in accordance with landowner requirements at the completion of the project.
- Excavation would begin on the floodplain to bring it down to grade.
- When specified, riparian berms may be excavated last so that finer grained material in the berm can be used to cap spoils areas.
- All riverine treatment areas (e.g., floodplains and feathered edges) are expected to be ripped to a depth of approximately 18 inches. The furrows developed by this ripping will ensure that storm water runoff is maintained on site so that there is little or no construction-related turbidity. This action would effectively control release of storm water from the site and eliminate the need for use of post-construction sediment-control measures (e.g., silt fences, berms).
- The timing for berm removal and work adjacent to the river may be affected by river flows. If for some reason the flow is low when construction starts, but it is anticipated that flows will increase before the floodplain can be excavated, excavation will occur at the lower elevations (adjacent to river) first, and at the higher floodplain elevations last. Alcoves and side channels would be constructed from the existing grade, down slope. A limited amount of material may be left in place (unexcavated) to isolate the area of work from flowing water. The openings for these features will rely on flow events to reconnect to the river.
- Final grading would occur as necessary for all activity areas.
- Demobilization of construction equipment and site clean-up would be accomplished prior to acceptance by the Contracting Officer.
- Revegetation would occur during wet conditions (fall/winter) and would generally occur only at or above the 1.5-year recurrence flow elevation.

In-River Construction

- Heavy equipment will be used to grub tree and shrub roots from the edge of the river. During this root removal, equipment will generally not enter within the low-water river channel.
- In-river excavation will begin at the far river-right edge of the activity area and work back toward the left bank such that heavy equipment is on dry land or in shallow water.
- In-river materials may be used to temporarily redirect flow around the work area and to create platforms from which to work. At least one navigable (by boat) passage through the activity area will remain open at all times.

Traffic Control/Detour

Short-term traffic control is expected and will be in conformance with the requirements established by the respective jurisdictional authority for mobilization/demobilization of heavy equipment or wide-load vehicles. These requirements include:

- Meeting requirements established by the jurisdictional authority for use of existing roadways and haul routes, including seasonal or other limitations or restrictions, payment of excess size and weight fees, and posting of bonds conditioned upon repair of damage.
- Constructing temporary roadways for access from public thoroughfares to serve the construction area; the roadways shall be of a width and load-bearing capacity to provide unimpeded traffic for construction purposes.

Contractor Staging and Storage Areas

Staging areas and storage facilities for the Proposed Action are shown on Figure 2.1a and 2.1b and listed in Table 2-3. These areas would be used throughout the duration of the project activities. Some short-term staging and equipment storage/parking are anticipated in the activity areas as the project is implemented.

Air Pollution and Dust Control

Efforts will be made to minimize air pollution. Reclamation specifications require that the contractor comply with all applicable air pollution control rules, regulations, ordinances, and statutes. Contract documents will specify that the contractor will be responsible for limiting dust by watering construction site areas used by trucks and vehicles. If water is taken from the river, pump intakes will be in conformance with criteria established by NMFS and CDFG to prevent impacts to aquatic organisms. Make-up water pumped from the river will pass through a screen at the inlet with maximum 1/4-inch openings and a maximum intake velocity of 0.8 feet per second.

Water Pollution Prevention

The contractor shall implement water pollution control measures that conform to applicable and appropriate permits. The contractor will be required to use extreme care to prevent construction dirt, debris, storm water run-off, and miscellaneous byproducts from entering the stream. Some key water pollution control measures that shall be implemented are listed below:

- The contractor shall exercise every reasonable precaution and best management practices (BMPs) to protect the Trinity River from being polluted by fuels, oils, bitumen, calcium chloride, and other harmful materials and shall conduct and schedule operations to avoid or minimize muddying and silting of the river. Care shall be exercised to preserve roadside vegetation beyond the limits of construction.
- Construction equipment will be inspected daily and maintained to ensure that fuel or lubricants do not contaminate the Trinity River. Spill containment kits will be onsite at all times and, where feasible, berms or other containment methods will be kept in place around the work areas when performing in-channel work.
- Water pollution control work is intended to provide prevention, control, and abatement of water pollution in the Trinity River, and shall consist of constructing those facilities that may be shown on the plans, specified herein or in the special provisions, or directed by the Contract Officer.
- Ripping of all riparian areas is expected to stop delivery of storm water to the river. As necessary, the contractor shall provide temporary water pollution control measures, including, but not limited to, dikes, basins, ditches, and applying straw and seed, which may become necessary as a result of the contractor's operations.
- Before starting any work on the project, the contractor shall develop an agency-approved Storm Water Pollution Prevention Plan (SWPPP) to effectively control water pollution during construction of the project. The SWPPP shall show the schedule for the erosion control work included in the contract and for all water pollution control measures that the contractor proposes to take, in connection with construction of the project, to minimize the effects of the operations on adjacent streams and other bodies of water. The contractor shall not perform any clearing and grubbing or earthwork on the project until the SWPPP has been accepted by responsible agencies.
- Water containing mud or silt from aggregate washing or other operations shall be treated by filtration, or retention in a settling pond, or ponds, adequate to prevent muddy water from entering live streams.
- Oily or greasy substances originating from the contractor's operations shall not be allowed to enter, or be placed where they will later enter, a live stream.

Tentative Schedule

Total construction time for the project is anticipated to be approximately 140 days, between November 1, 2006, and October 15, 2007. Revegetation would take place in the wet season following construction (fall/winter).

Construction associated with any action alternative cannot begin until the environmental documentation has been adopted by Reclamation, BLM, the Regional Water Board, and Trinity County, and the following have been completed: the final design, plans, contract specifications, and cost estimates; award of contract(s) for work; acquisition of ROWs; acquisition of permits; and design approvals from local, state, and federal agencies.

2.6.4 ALTERNATIVE 1

Alternative 1 is identical to the Proposed Action in terms of riverine (R) and upland (U) activities. The fundamental distinction of this alternative is that it excludes the construction and use of the low-flow crossings on the Trinity River and Weaver Creek. This alternative reflects agency and stakeholder involvement and was developed to reduce significant impacts to anadromous salmonids that use waters within the project boundary. Under this alternative, access will be provided using a network of existing and new roads. Figures 2.3a and 2.3b illustrate the road network that will be developed under this alternative.

In addition to the roads identified under the Proposed Action, Alternative 1 includes existing roads managed by Trinity County, BLM, and a private land owner. The new road required to access the upstream activity areas (R-1, U-1, U-2 and C-1) would follow the alignment of an existing skid trail, as shown on Figures 2.3a and 2.3b. This road segment would be constructed to the minimum standards required for vehicular traffic, although adverse grades in excess of 20 percent for short sections may be provided.

Table 2-5 summarizes the activities included in Alternative 1.

Alternative access to the activity areas on the right side of the Trinity River would reduce the amount of in-channel activities by excluding activity areas X-1 and X-2. Access from the upland location would result in a net increase of 2.22 miles of existing road and 0.48 mile of new road required to access the right side of the river. The existing roads included in this alternative vary (i.e., width, surfacing, sight distance) and will require improvements to meet the design criteria for critical vehicles. The new road segment that would connect the private road to R-1 follows the alignment of skid trails that were used to install underground utilities. While this alignment generally provides grades feasible for heavy equipment, substantial construction (i.e., cut and fill) would be required to provide a stable road prism that meets the project objectives. This alternative acknowledges that the location of this road segment is on steep slopes immediately upslope of the Trinity River and incorporates additional design criteria to address resource impacts. Upon completion of the activities on the right side of the river, the existing roads will be rehabilitated to standards required by the manager/owner, and new roads will be decommissioned/stabilized in accordance with manager/owner requirements.

Overall, Alternative 1 is similar to the Proposed Action with regards to the expectation that these activities would enhance site-specific riverine processes and eventually result in the development of point bars and floodplain habitat that do not presently exist. Similar to the Proposed Action, the temporal and spatial changes to the form and function of the Trinity River are subject to variability in the flow regime over several years.

Creation of these features would be accomplished through the rescaling of the river channel (e.g., feathered edges, floodplains, side channels) within the riverine activity areas, although there is an expectation that natural alluvial processes may immediately affect a larger area. This rehabilitation of river function could result in the future development of a larger and more complex expanse of river and floodplain habitats. The result of habitat expansion would be increased habitat suitability and availability for salmonids and other native fish and wildlife species.

TABLE 2-5
SUMMARY OF ALTERNATIVE 1 – ACTIVITY AREAS

Activity Area (Acres)	Treatment Area (acres) ^a	Volume (cubic yards) ^b	Potential Activity
R-1 (12.47)	5.42	30,000	B
R-2 (2.12)	1.40	900	A, B, G
R-3 (6.12)	2.18	5,500	C, I
R-4 (2.55)	0.84	4,300	B
R-5 (2.34)	1.78	700	H
R-6 (1.51)	1.21	0	Vegetation removal
R-7 (1.54)	0.50	2,100	E, G
R-8 (12.09)	11.96	80,000	D, F, G
R-9 (2.17)	2.11	12,000	I
R-10 (0.10)	0.10	500	Excavate tailings
<i>Subtotal R</i>	<i>27.50</i>	<i>136,000</i>	
U-1 (0.77)	0.77	16,000	J
U-2 (1.90)	1.90	14,000	J
U-3 (5.23)	5.23	92,500	J
<i>Subtotal U</i>		<i>123,500</i>	
Existing Roads (16.96)	16.96	N/A	(2.85 miles)
New Roads (11.01)	11.01	N/A	(2.04 miles)
C-1 (0.44)	0.44	N/A	K
C-2 (1.00)	1.00	N/A	K
C-3 (0.54)	0.54	N/A	K
C-4 (0.22)	0.22	N/A	K
C-5 (0.52)	0.52	N/A	K
<i>Subtotal C</i>	<i>2.72</i>	<i>N/A</i>	

^aArea calculated from project GIS

^bProvided by TRRP

The use of upland access in lieu of the crossings would reduce the in-channel activities, but increase the areal extent of the project in the upland environment.

As described in Section 2.6-6, Alternative 1 would include some level of revegetation for certain activity areas. The actual amount of revegetation included in this alternative would be determined upon completion of final grading activities. As proposed, revegetation activities would be restricted to the floodplain and side channel features that would be minimally inundated at flows in excess of 6,000 cfs.

Path: R:\Projects\10010 Mechanical Channel Rehab Sites on Mainstem Trinity River\GIS\Site-Indian_Creek\10010_IndianCk_Fig. 2.3a_Alt-1_Rehab_Areas.mxd Source: NSR, Inc.; USBR; USGS 05-24-06 bmoore

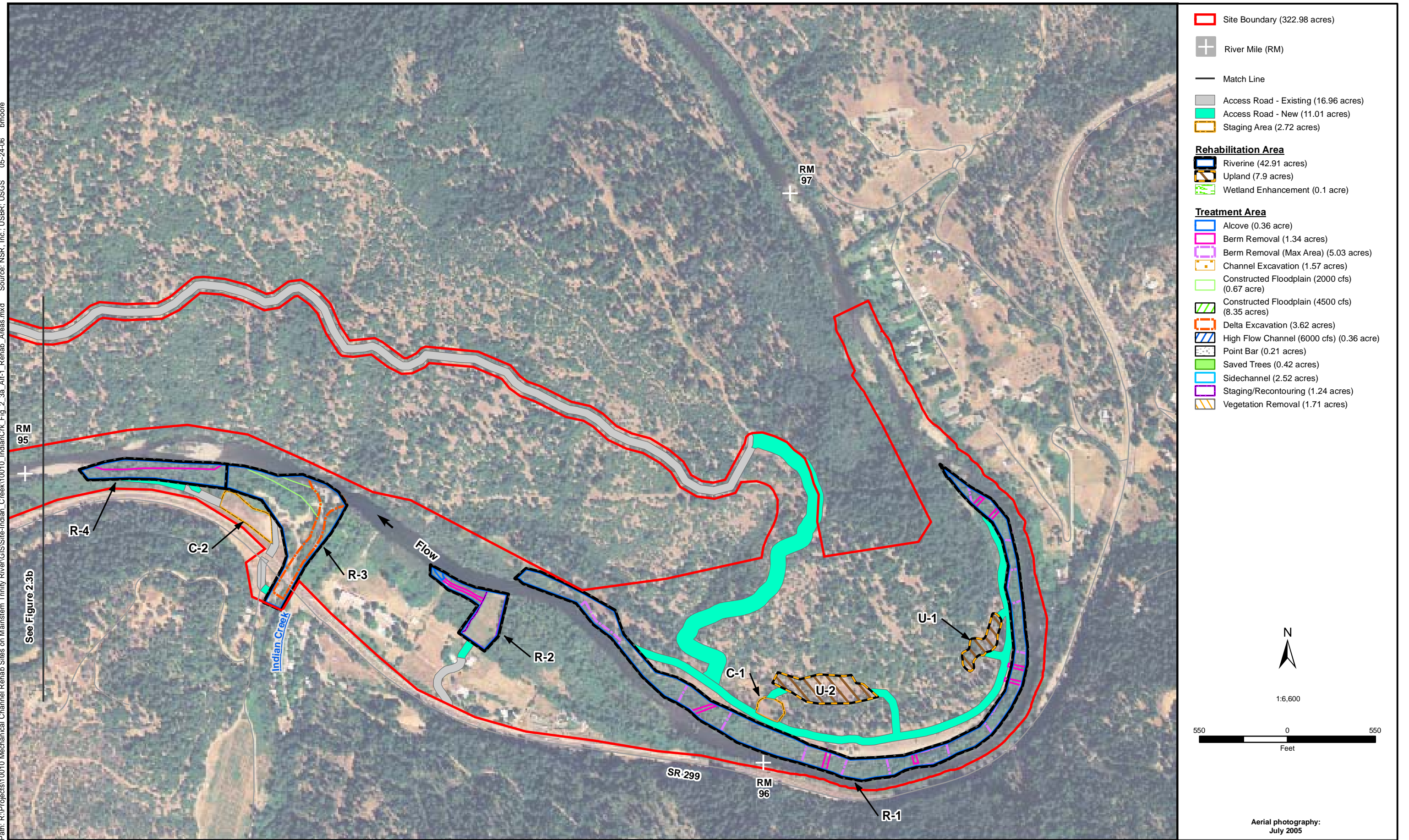


Figure 2.3a
Alternative 1 Rehabilitation Areas

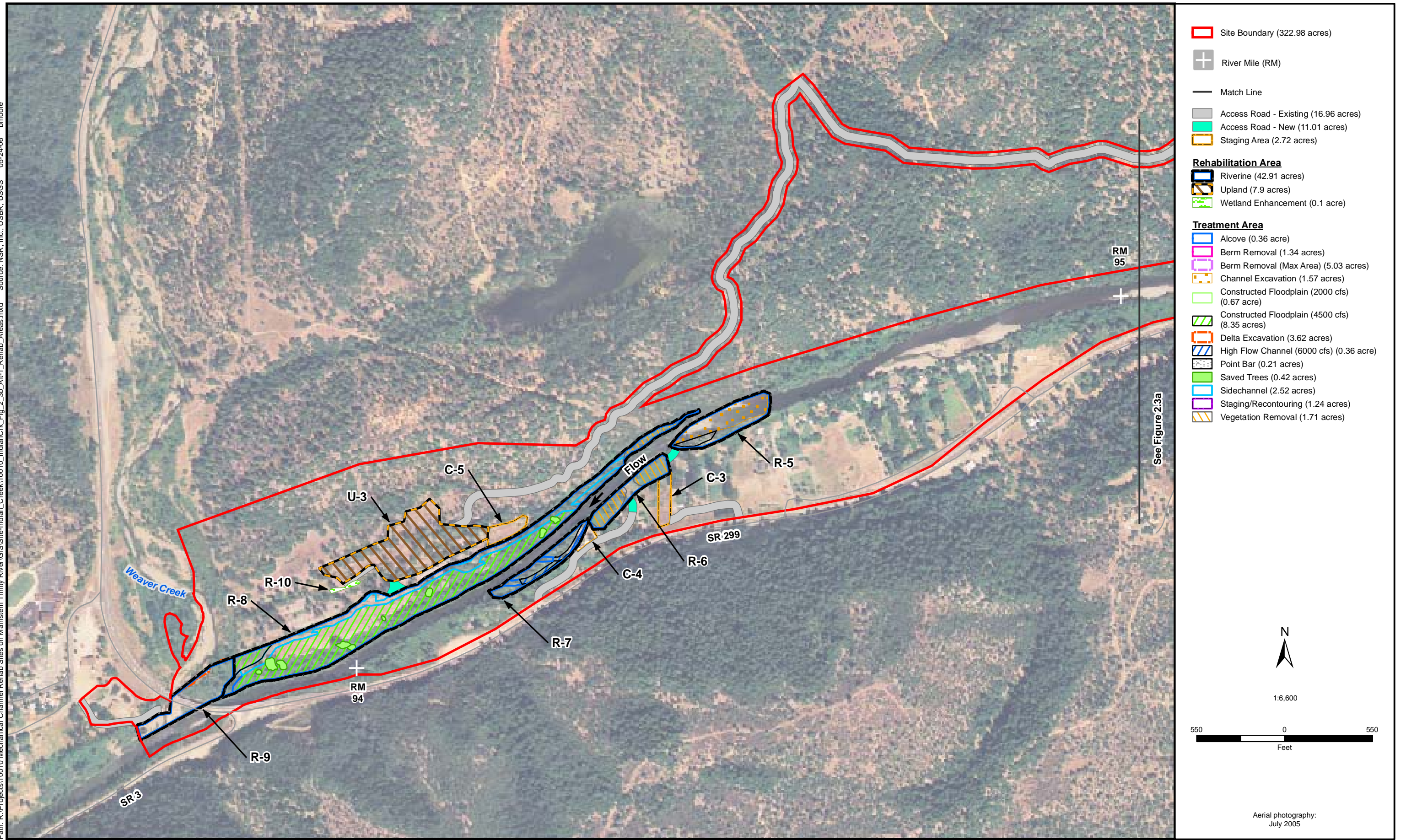


Figure 2.3b
Alternative 1 Rehabilitation Areas

As appropriate, all activities would include specific measures intended to limit or prohibit the reintroduction of noxious and invasive plant species. The spread of noxious, invasive, and exotic plant species within the project boundary will be controlled by implementing excavation and disposal activities in a manner that maximizes control of seed and root-sprout sources and reduces the potential for non-native plant infestation (e.g., burial).

Design Elements

The design elements described for Alternative 1 are consistent with the description provided for the Proposed Action with regard to the riverine, upland, and staging activities. The preceding section describes the specific differences between this alternative and the Proposed Action.

2.6.5 ALTERNATIVE 2

Alternative 2 excludes the activity areas on the right side of the Trinity River at the upstream end of the project boundary. Activity areas excluded from this alternative are R-1, U-1, U-2, and C-1. By excluding these areas, access would not be required via X-1 (Trinity River crossing) or the upland road network described in Alternative 1. This alternative responds to significant impacts associated with the construction and use of the crossing (Proposed Action) and the new road segment (Alternative 1). This alternative reflects agency and stakeholder involvement and was developed to reduce significant impacts to upland and aquatic habitat within the project boundary. Alternative access using a network of existing and new roads would preclude the requirement to access the activity areas on the right side of the Trinity River via constructed crossings. Figures 2.4a and 2.4b illustrate this alternative.

Table 2-6 summarizes the activities included in Alternative 2.

TABLE 2-6
SUMMARY OF ALTERNATIVE 2 – ACTIVITY AREAS{ TC "Table 2-6
Summary of Alternative 2—Activity Areas" \f B \l "1" }

Activity Area (Acres)	Treatment Area (acres) ^a	Volume (cubic yards) ^b	Potential Activity
R-2 (2.12)	1.40	900	A, B, G
R-3 (6.12)	2.18	5,500	C, I
R-4 (2.55)	0.84	4,300	B
R-5 (2.34)	1.78	700	H
R-6 (1.51)	1.21	0	Vegetation removal
R-7 (1.54)	0.50	2,100	E, G
R-8 (12.09)	11.96	80,000	D, F, G
R-9 (2.17)	2.11	12,000	I
R-10 (0.10)	0.10	500	Excavate tailings
<i>Subtotal R</i>	<i>24.80</i>	<i>106,000</i>	
U-3 (5.23)	5.23	92,500	J
X-2 (0.05)	0.05	50	Weaver Creek crossing

TABLE 2-6
SUMMARY OF ALTERNATIVE 2 – ACTIVITY AREAS { TC "Table 2-6
 Summary of Alternative 2—Activity Areas" f B \l "1" }

Activity Area (Acres)	Treatment Area (acres)^a	Volume (cubic yards)^b	Potential Activity
<i>Subtotal U,X</i>	5.28	92,550	
Existing Roads (3.50)	3.50	N/A	L (.63 mile)
New Roads (0.93)	0.93	N/A	M (.49 mile)
C-2 (1.00)	1.00	N/A	K
C-3 (0.54)	0.54	N/A	K
C-4 (0.22)	0.22	N/A	K
C-5 (0.52)	0.52	N/A	K
<i>Subtotal</i>	2.28	N/A	

^aArea calculated from project GIS

^bProvided by TRRP

Alternative 2 would result in a measurable reduction in the type, location, and areal extent of activities within the project boundary. This alternative excludes the R-1 activity area; therefore, the access road/channel crossings, upland disposal, and staging areas associated with R-1 will not be necessary. Compared to the Proposed Action, this alternative reduces the riverine and upland treatments by 5.42 acres (30,000 cubic yards excavated); excludes 0.44 acre of staging area; requires 1.39 miles less new road; and eliminates the need for the Trinity River crossing, X-1.

Overall, Alternative 2 is similar to the Proposed Action with regards to the expectation that it would enhance site-specific riverine processes and eventually result in development of point bars and floodplain habitat that do not presently exist. Similar to the Proposed Action, the temporal and spatial changes to the form and function of the Trinity River are subject to variability in the flow regime over several years.

Creation of these features would be accomplished through the rescaling of the river channel (e.g., feathered edges, floodplains, side channels) within the riverine activity areas, although there is an expectation that natural alluvial processes may immediately affect a larger area. This rehabilitation of river function could result in the future development of a larger and more complex expanse of river and floodplain habitats. The result of habitat expansion would be increased habitat suitability and availability for salmonids and other native fish and wildlife species.

The use of upland access in lieu of the crossings would reduce the in-channel activities, but increase the areal extent of the project in the upland environment.

As described in Section 2.6, Alternative 2 would include some level of revegetation for certain activity areas. The actual amount of revegetation included in this alternative would be determined upon completion of final grading activities. As proposed, most revegetation activities would be restricted to the floodplain and side channel features that would be minimally inundated at flows in excess of 6,000 cfs. As appropriate, all activities would include specific measures intended to limit or prohibit the reintroduction of noxious and invasive plant species. The spread of noxious, invasive, and exotic plant species within the project boundary will be controlled by implementing excavation and disposal activities

Path: R:\Projects\10010 Mechanical Channel Rehab Sites on Mainstem Trinity River\GIS\Site-Indian_Creek\10010_IndianCk_Fig_2.4a_Alt-2_Rehab_Areas.mxd Source: NSR, Inc.; USBR; USGS 05-30-06 bmoore

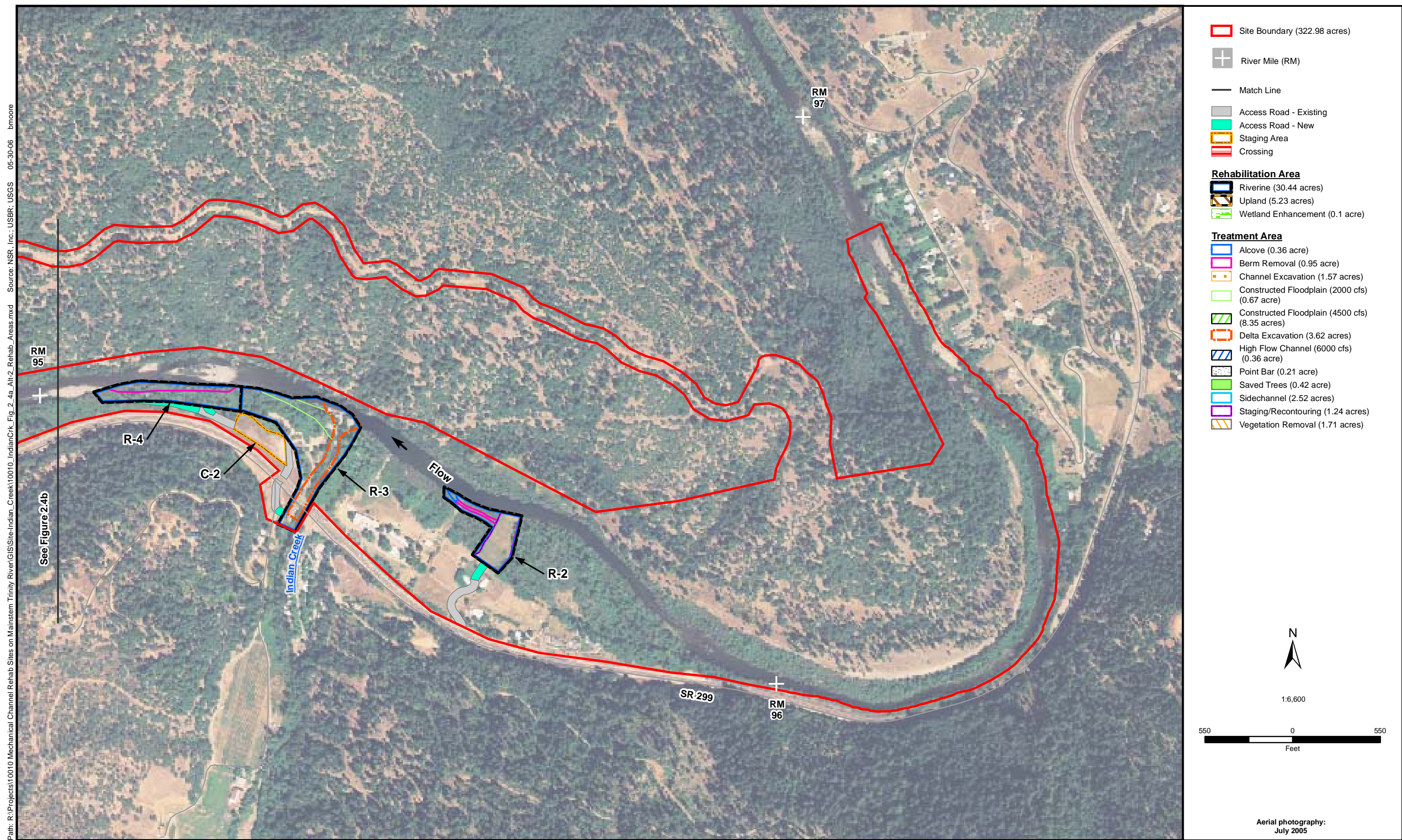
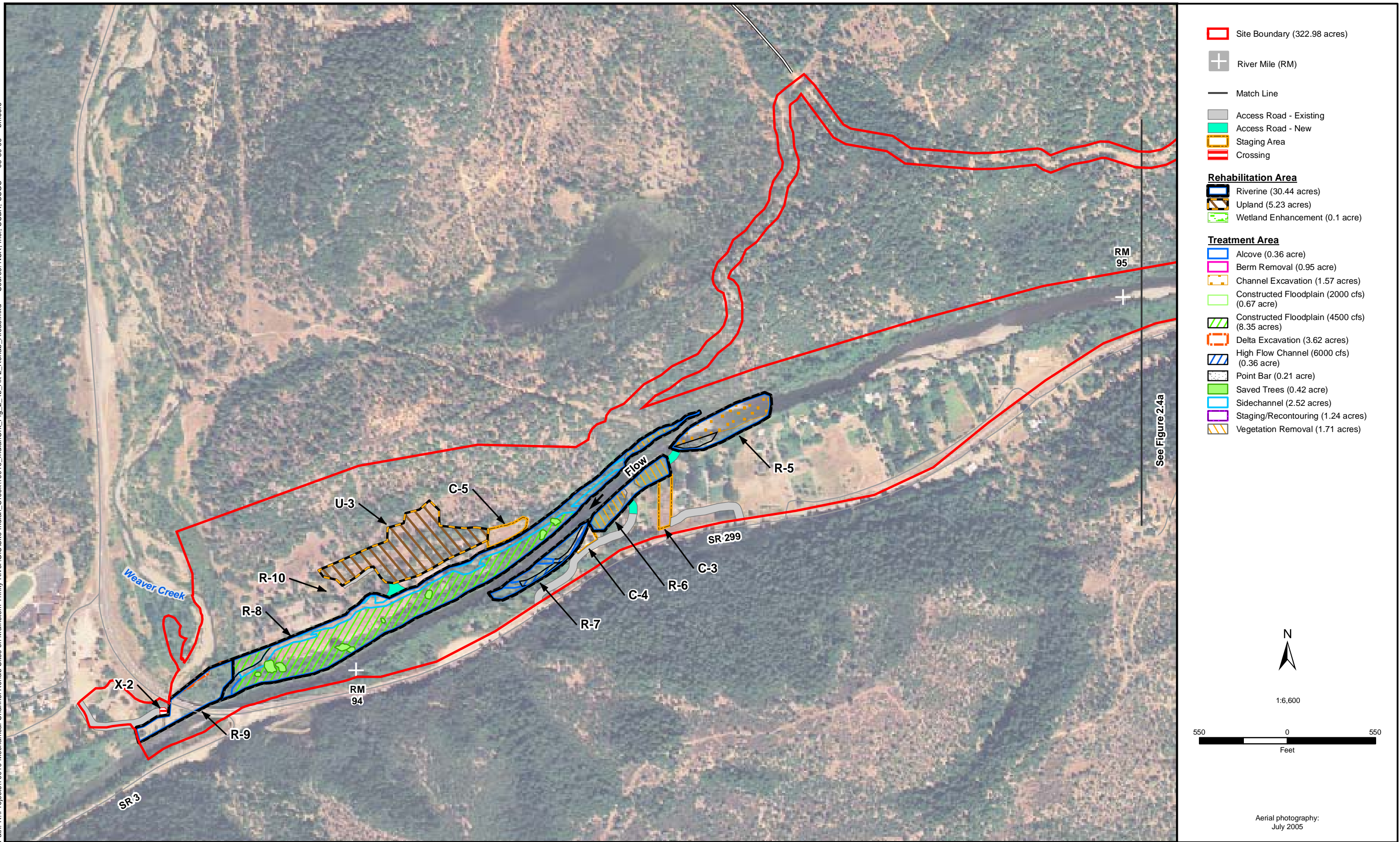


Figure 2.4a
Alternative 2 Rehabilitation Areas

Path: R:\Projects\10010 Mechanical Channel Rehab Sites on Mainstem Trinity River\GIS\Site-Indian_Creek\10010_IndianCk_Fig. 2.4b_Alt-2_Rehab_Areas.mxd Source: NSR, Inc.; USBR, Inc. 05-30-06 bmoore



Design Elements

The design elements described for Alternative 2 are consistent with the description provided for the Proposed Action with regard to the riverine, upland, and staging activities. The preceding section describes the specific differences with regards to upstream activities on the right side of the Trinity River.

2.7 Representative Construction Activities

To illustrate the type and extent of rehabilitation activities described in the previous section, a series of cross sections was prepared for the treatment areas within each riverine and upland activity area. The cross sections for the riverine activity areas are shown on Figures 2.5a-j, and the cross sections for the upland activity areas are shown on Figures 2.6a-c. Figure 2.7a and 2.7b illustrate the profile view of the low-water crossings. To the extent feasible, the cross sections were selected to portray the maximum extent of disturbance that would occur. For continuity and readability, these cross sections are included at the end of this chapter.

2.8 Alternatives Considered but Eliminated from Further Evaluation

2.8.1 DISPOSE MATERIAL BELOW 100-YEAR BASE FLOOD ELEVATION

To minimize material haul distance and cost, spoiling material below the 100-year base flood elevation was considered. This option would involve moving excavated material a short distance and depositing it in an adjacent flat area within the floodplain. After investigation, it was determined that spoiling large amounts of material in the floodplain could result in undesirable changes to FEMA flood elevations both within and outside of the Proposed Action area.

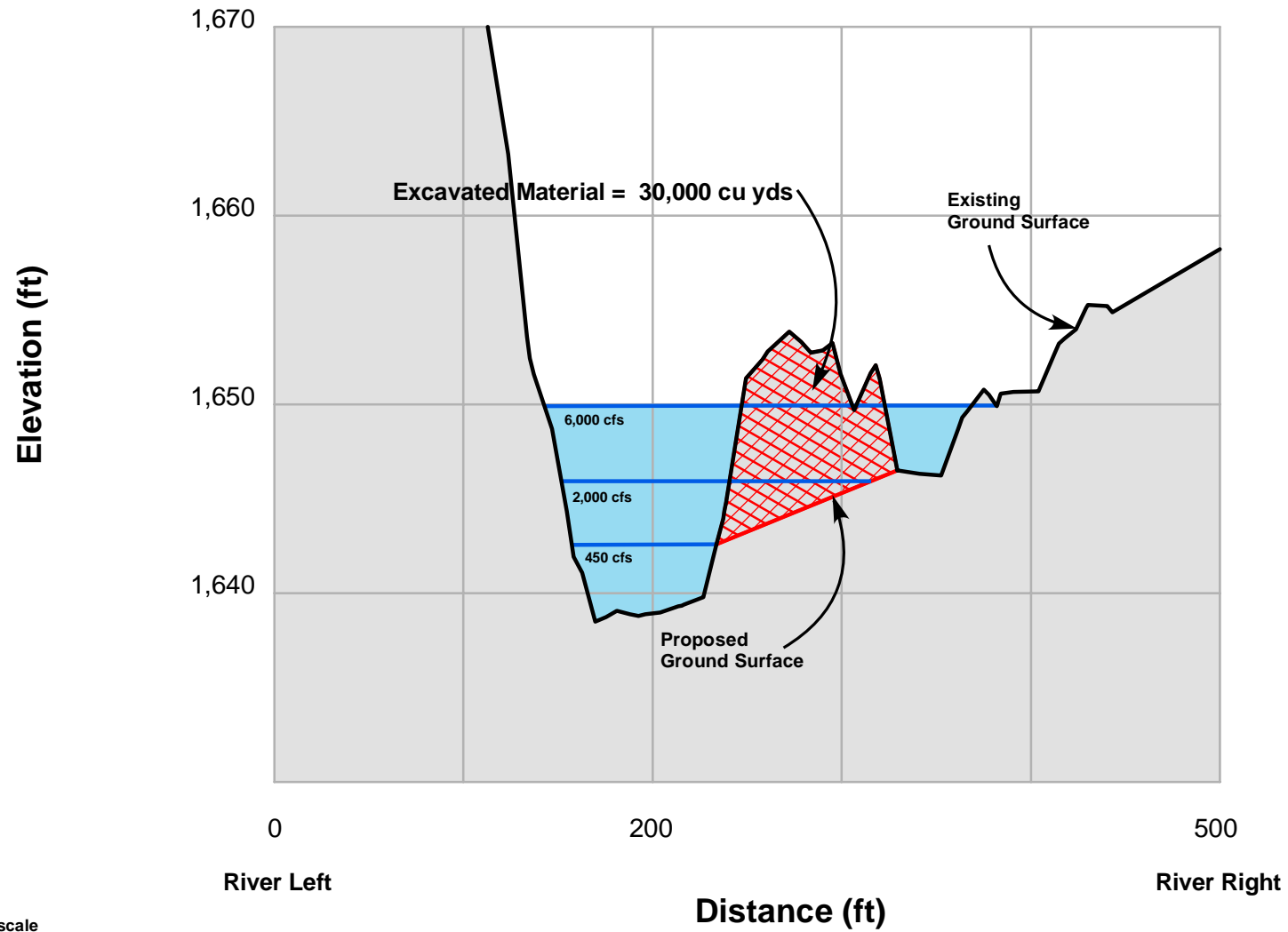
2.8.2 EXPORT MATERIAL OPTIONS

This option would involve moving all excavated material off site to reduce potential impacts to established FEMA flood elevations. This option was determined to be undesirable because of the cost associated with trucking excavated material to a remote site. Presently, depending on contractor needs, materials may be moved off-site from all river left riverine activity areas for processing with an approved use permit pursuant to Trinity County's Zoning Ordinance (Ordinance No. 315).

2.8.3 FULL CHANNEL EXCAVATION

Significant excavation of the channel adjacent to the homes potentially affected by maximum Trinity River ROD fishery releases was requested by some of the landowners. A HEC-RAS model of excavation of 103,000 cubic yards of material (25 feet wide at a longitudinal slope of 0.002 foot/foot, with 2:1 side slopes from the channel) only reduced upstream water elevations by no more than 8 inches. Since the project's intent is to maximize fish habitat and to provide decreases in ROD flow inundation areas while minimizing in-channel excavation, this alternative, was eliminated from further review. Appendix G provides additional information on this subject.

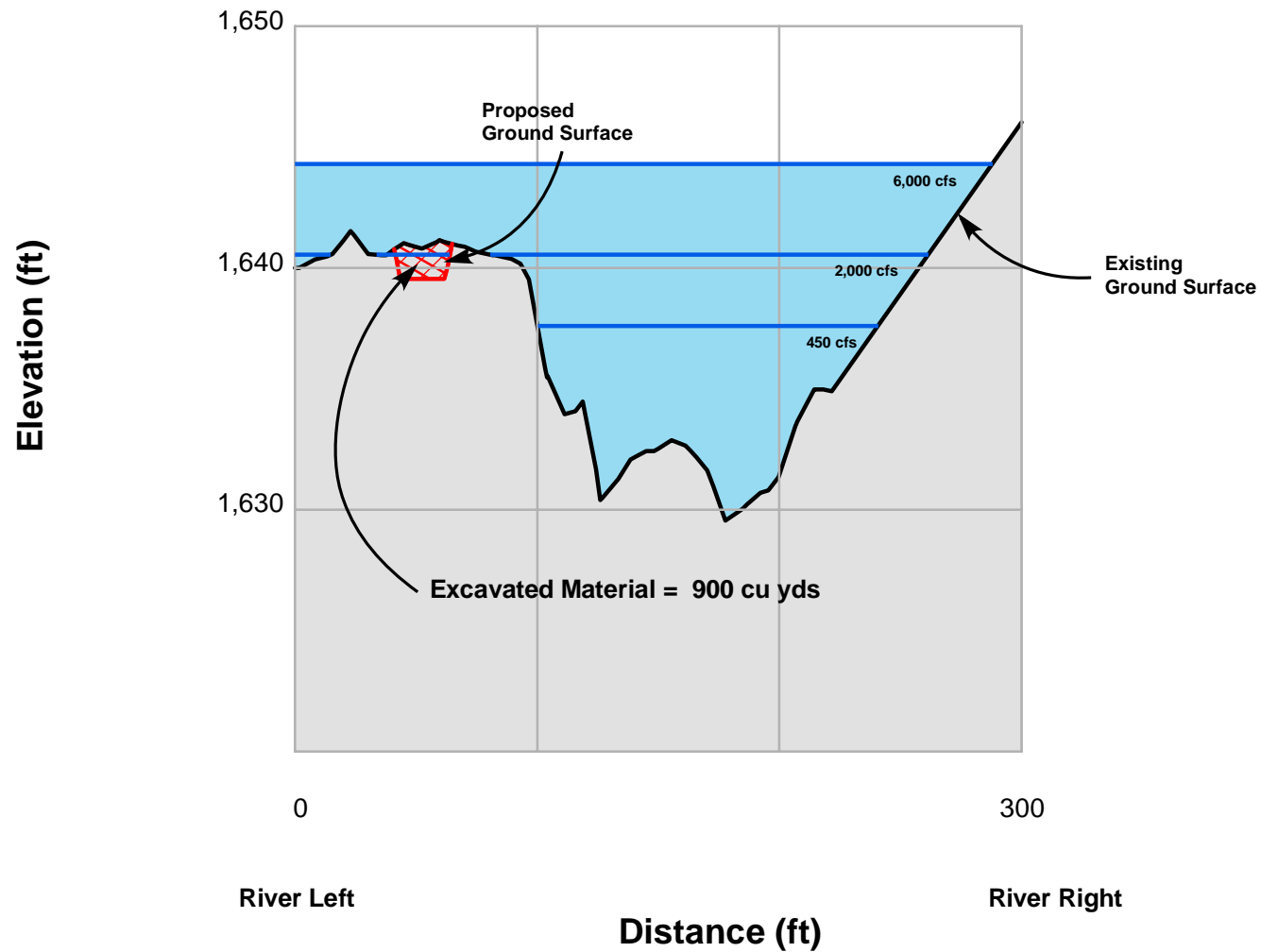
R-1 Cross Section



Note: Not to scale
Shown for comparative purposes

Figure 2.5a
R-1 Cross Section Profile of Proposed Rehabilitation Area

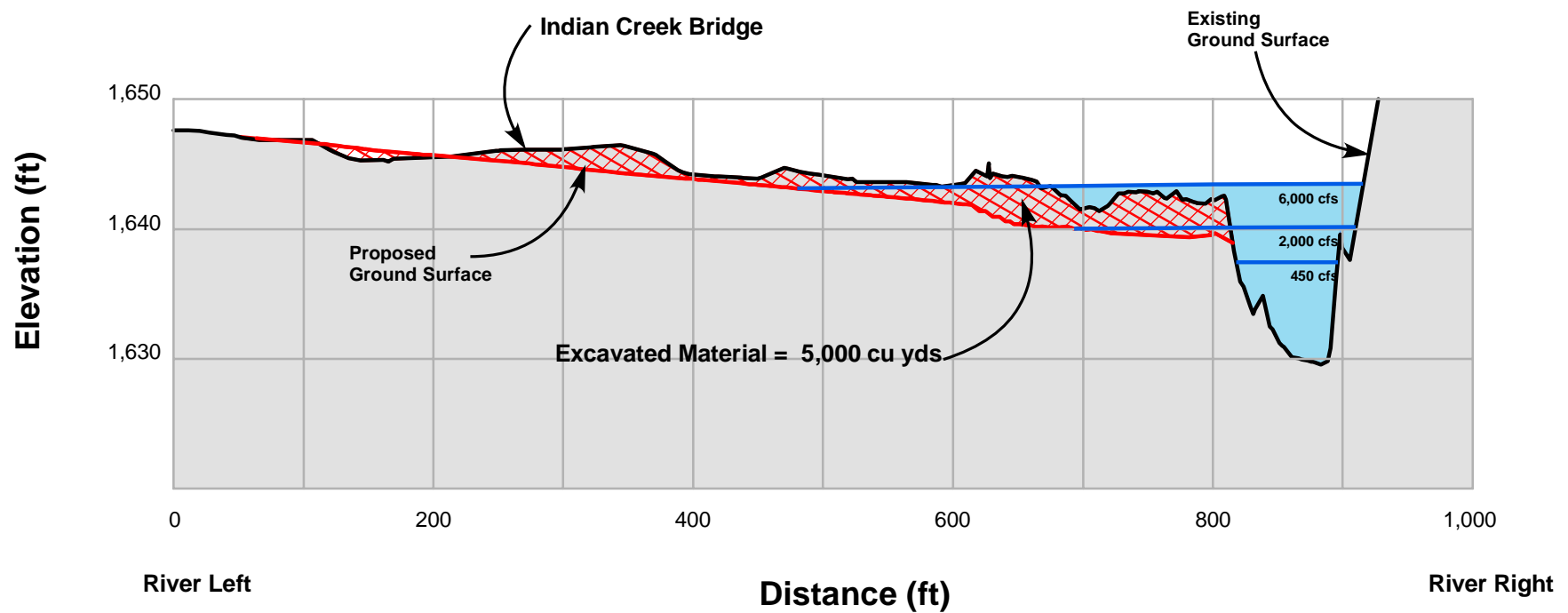
R-2 Cross Section



Note: Not to scale
Shown for comparative purposes

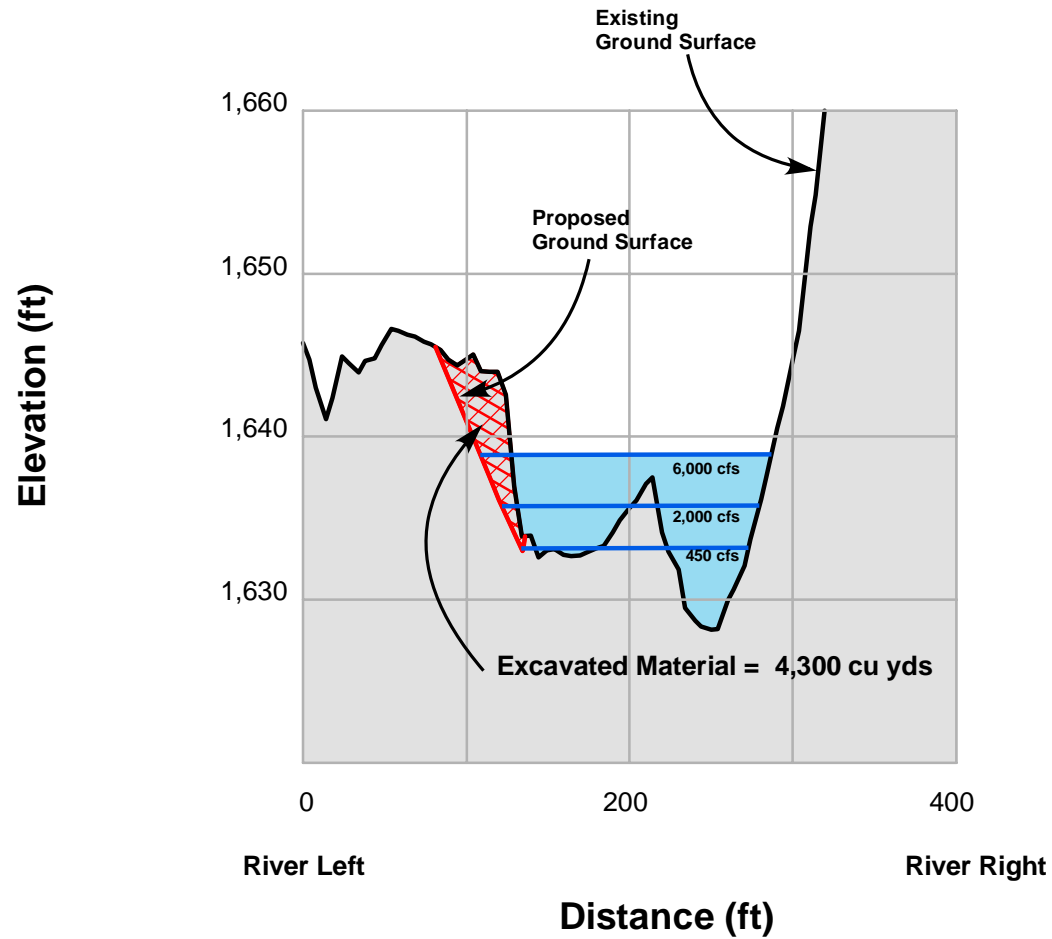
Figure 2.5b
R-2 Cross Section Profile of Proposed Rehabilitation Area

R-3 Cross Section



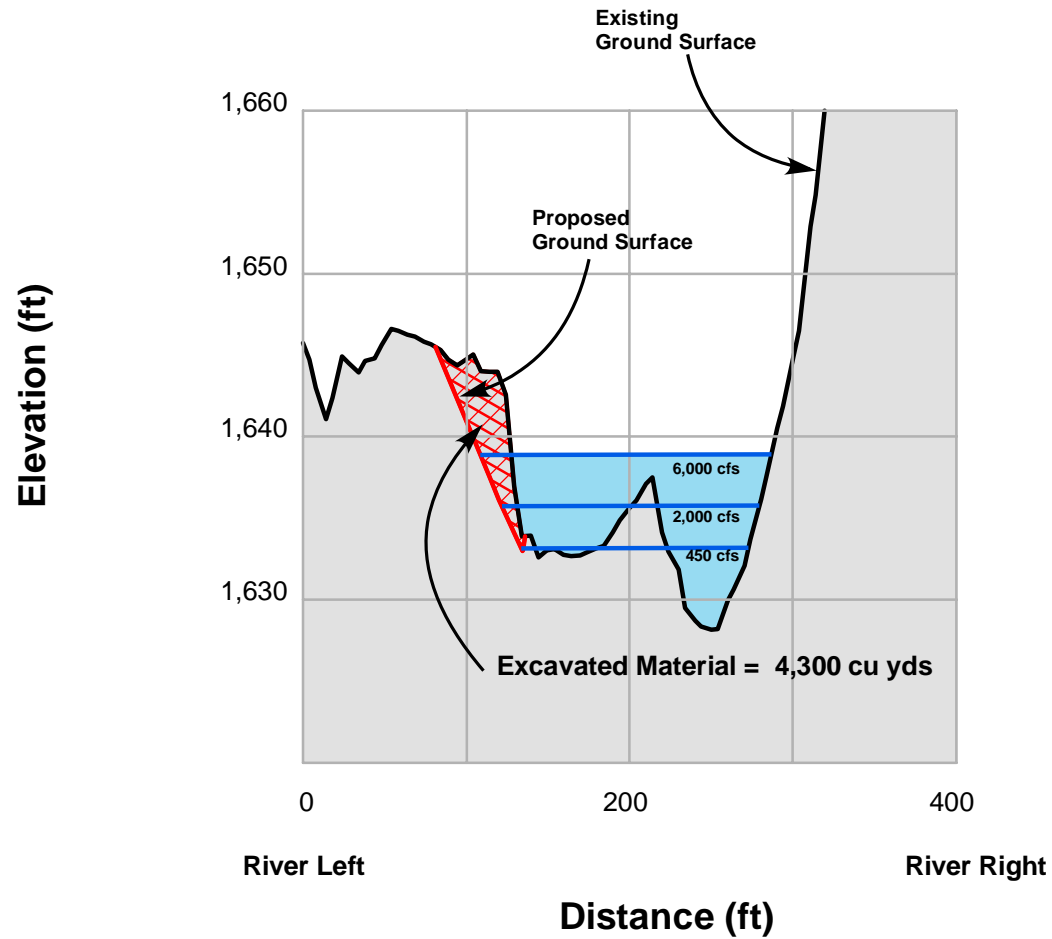
Note: Not to scale
Shown for comparative purposes

R-4 Cross Section



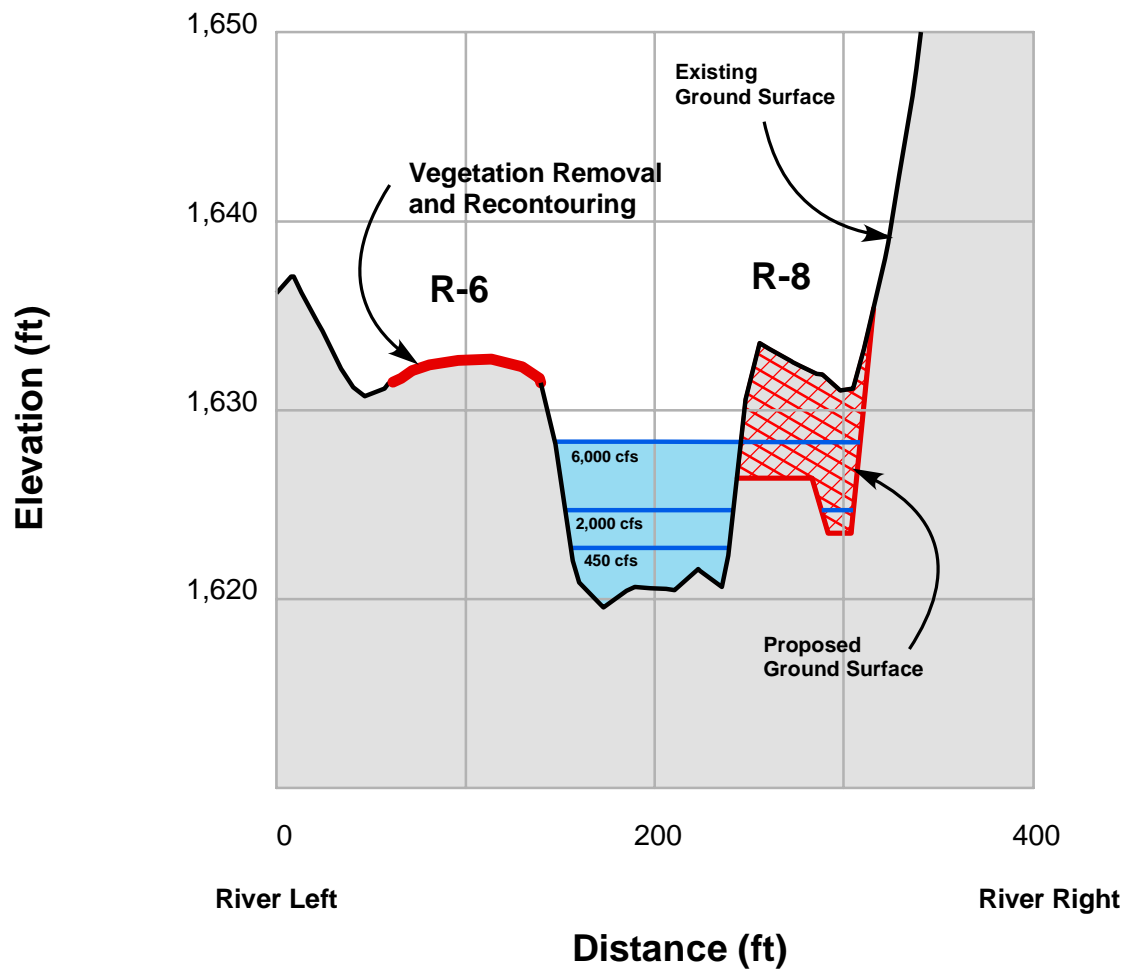
Note: Not to scale
Shown for comparative purposes

R-4 Cross Section



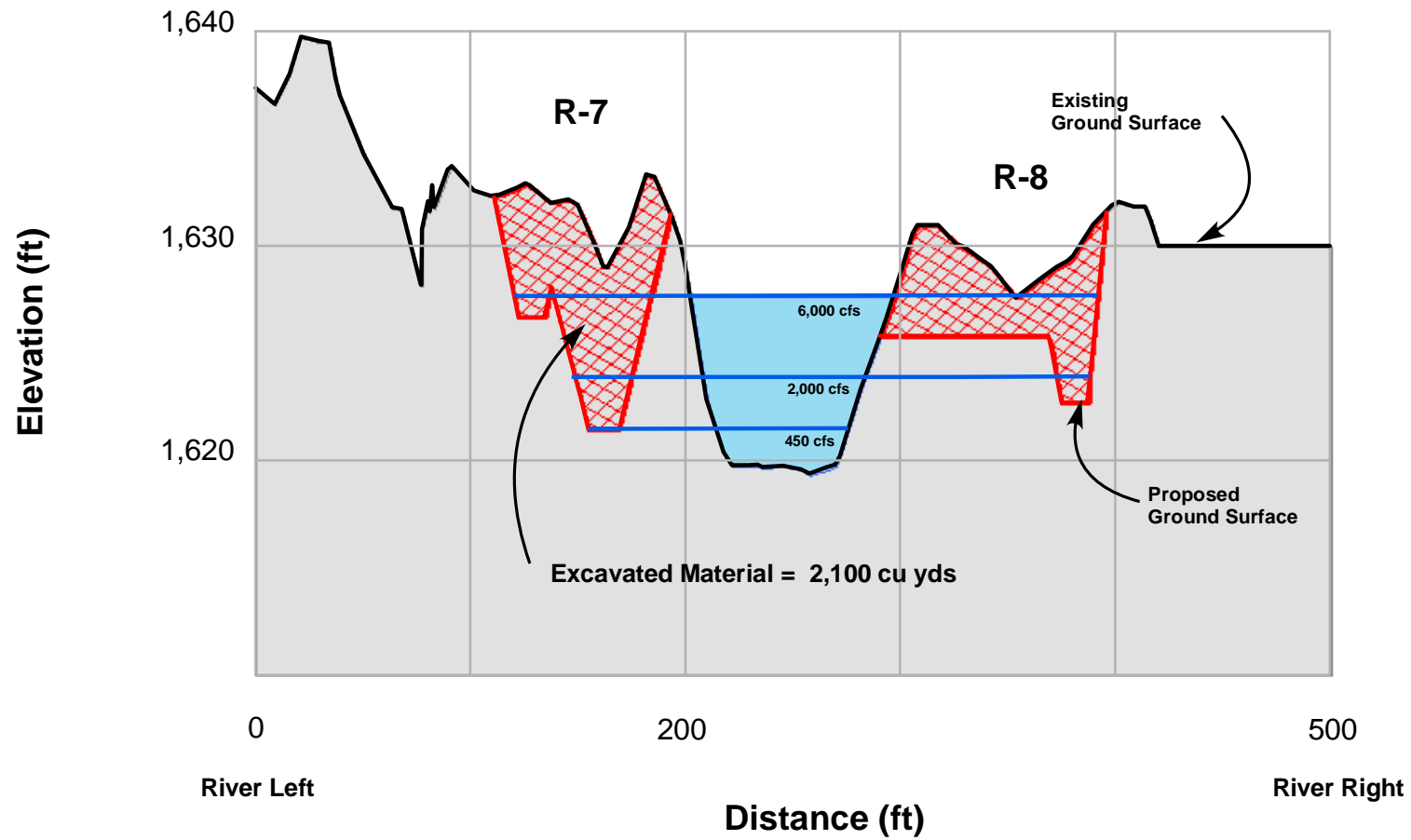
Note: Not to scale
Shown for comparative purposes

R-6 Cross Section



Note: Not to scale
Shown for comparative purposes

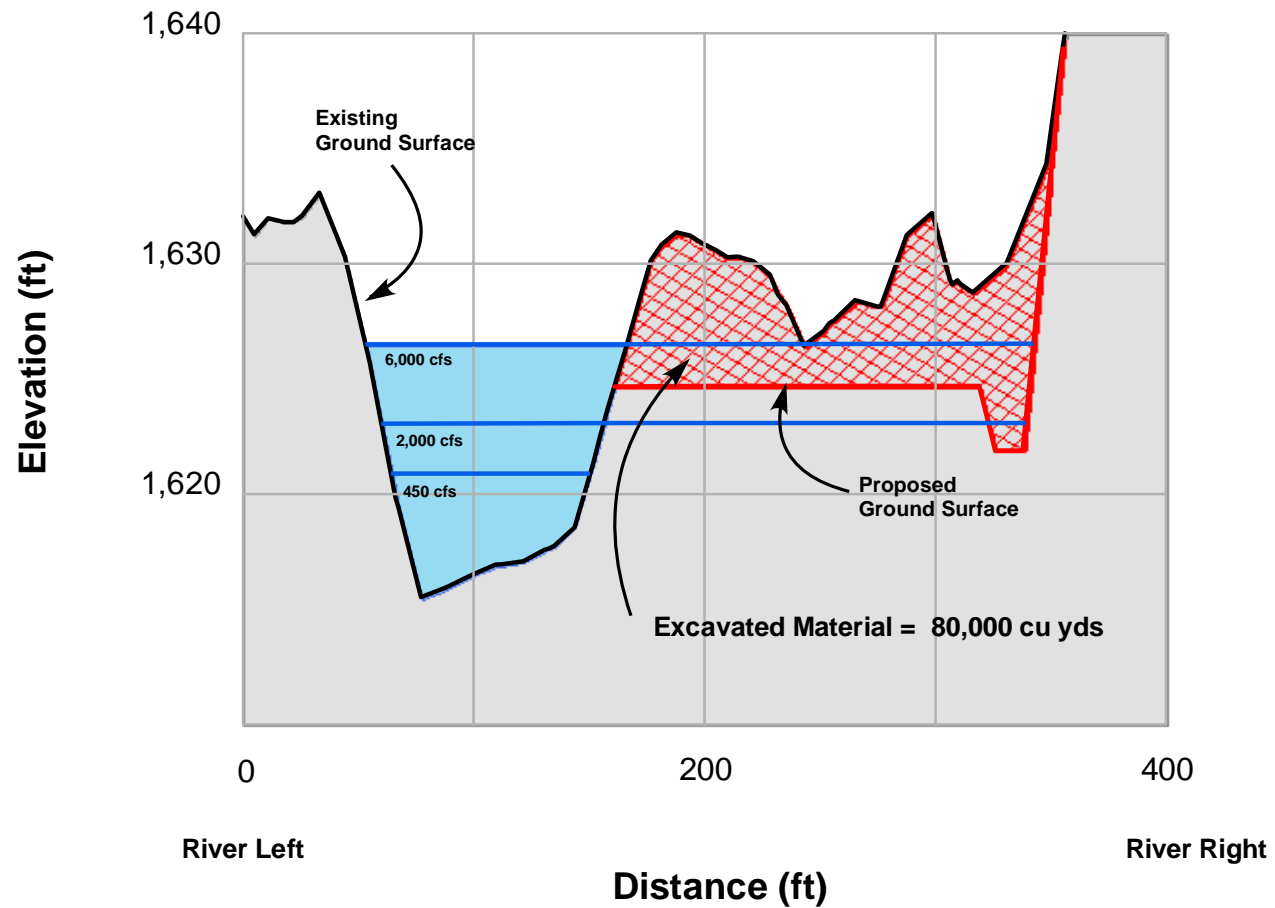
R-7 Cross Section



Note: Not to scale
Shown for comparative purposes

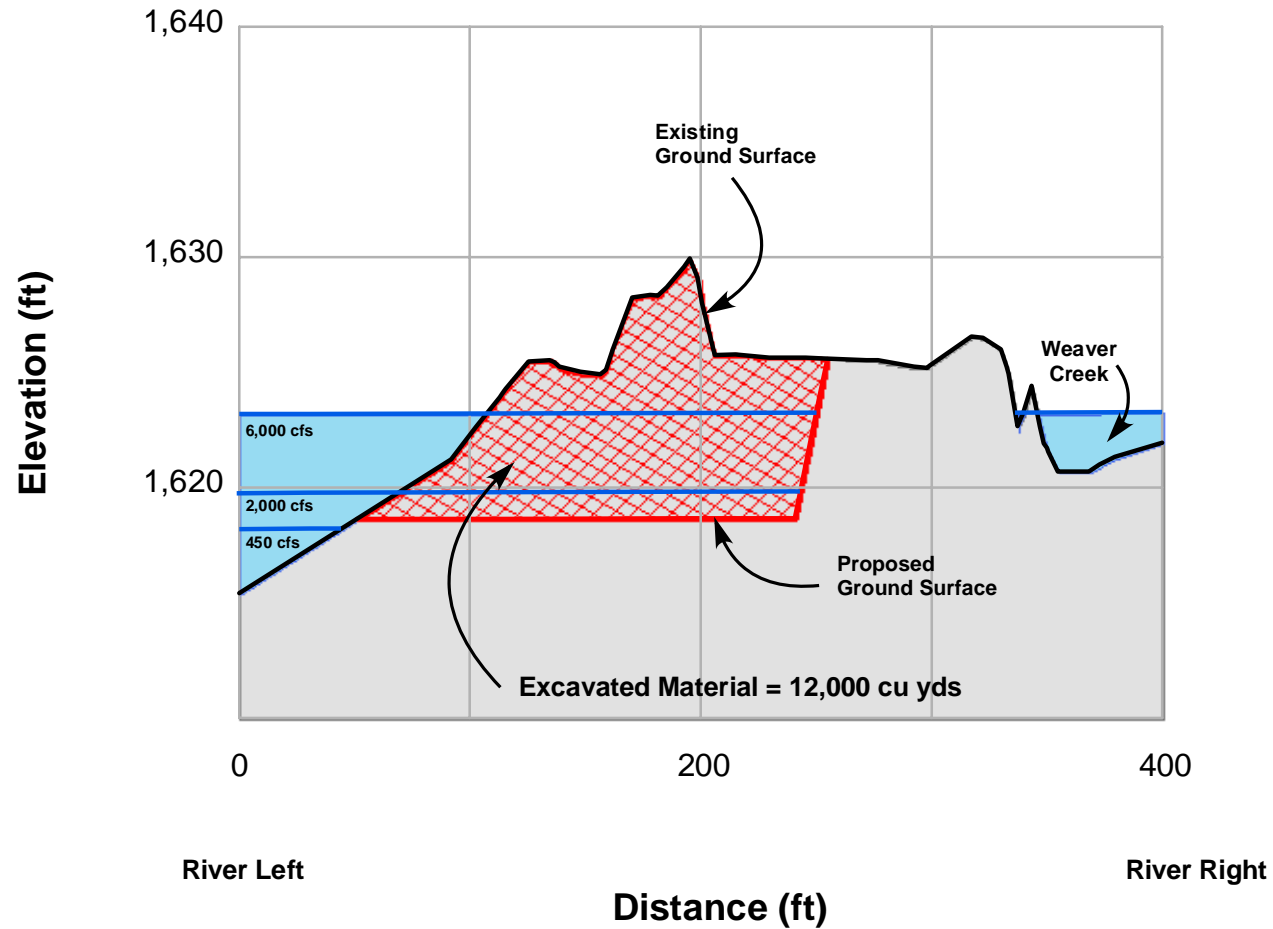
Figure 2.5g
R-7 Cross Section Profile of Proposed Rehabilitation Area

R-8 Cross Section



Note: Not to scale
Shown for comparative purposes

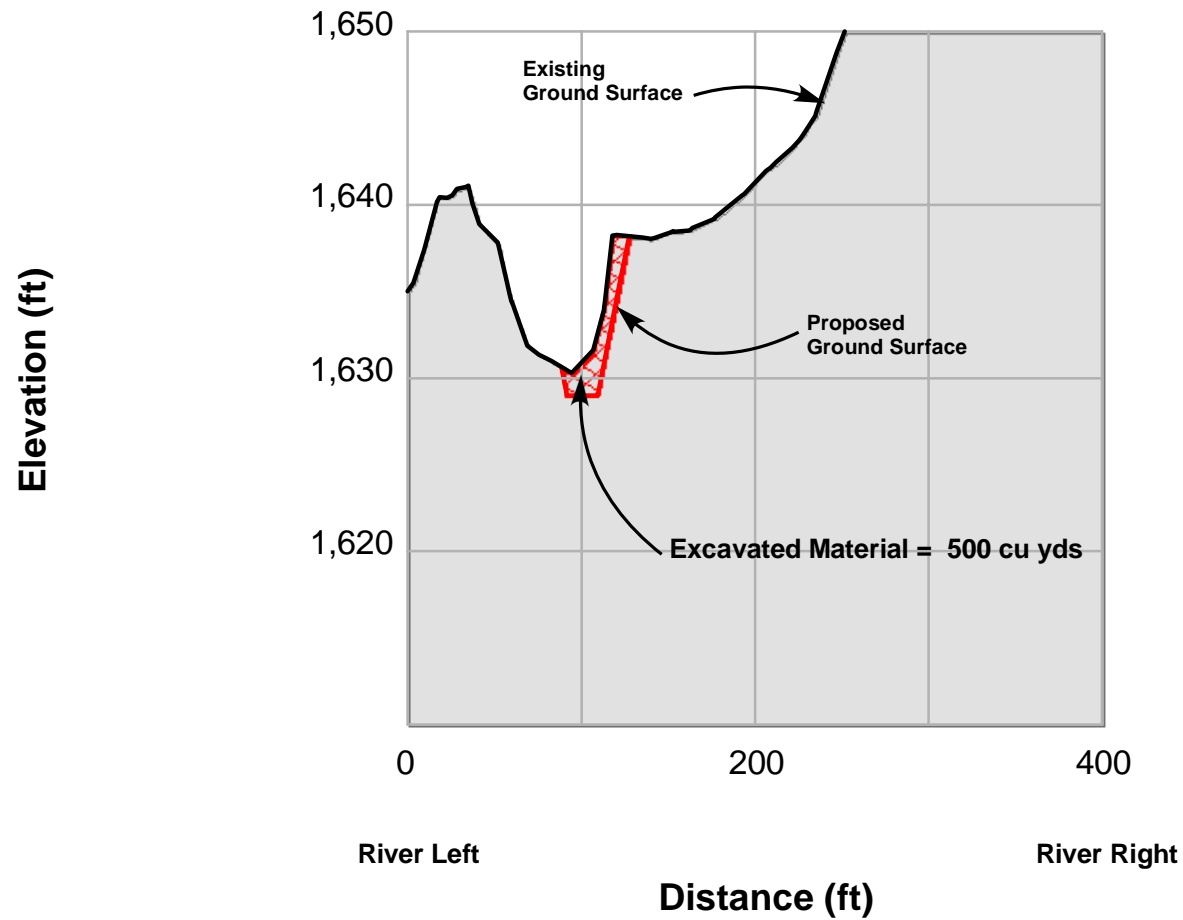
R-9 Cross Section



Note: Not to scale
Shown for comparative purposes

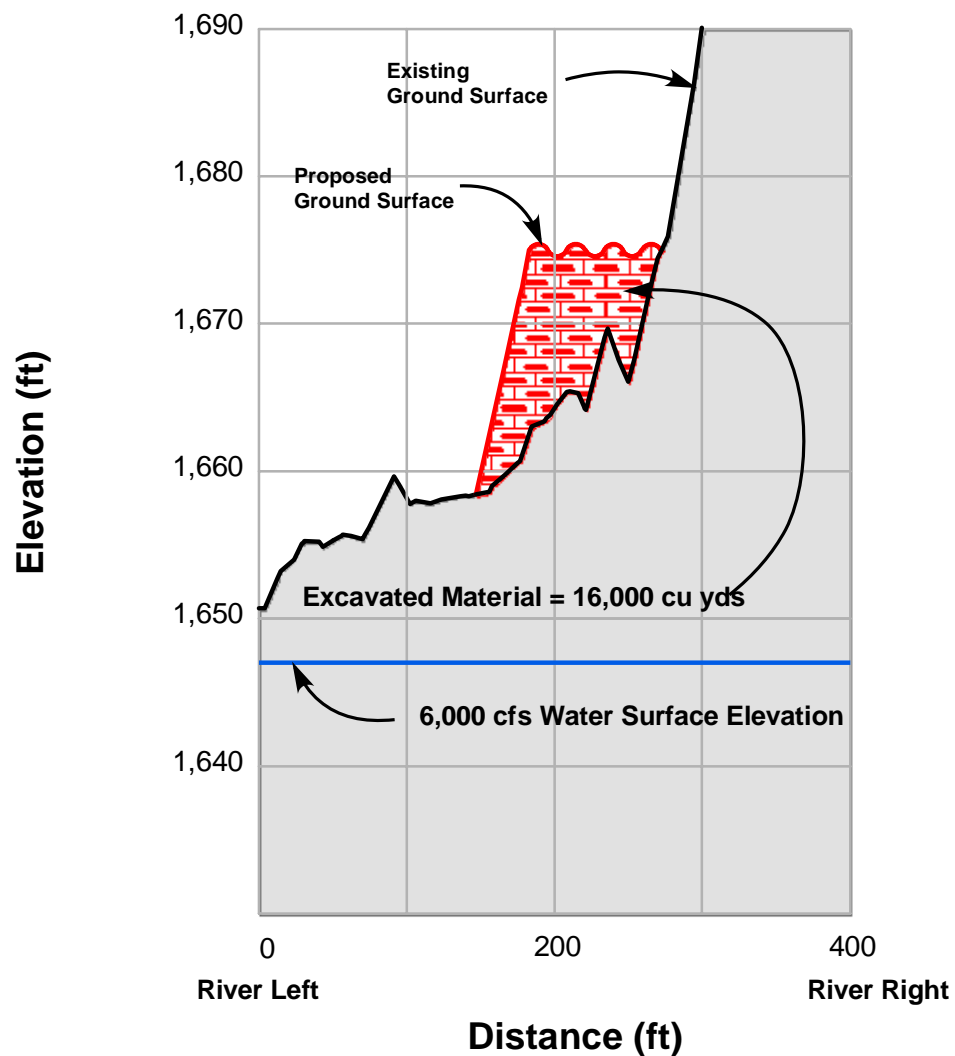
Figure 2.5i
R-9 Cross Section Profile of Proposed Rehabilitation Area

R-10 Cross Section



Note: Not to scale
Shown for comparative purposes

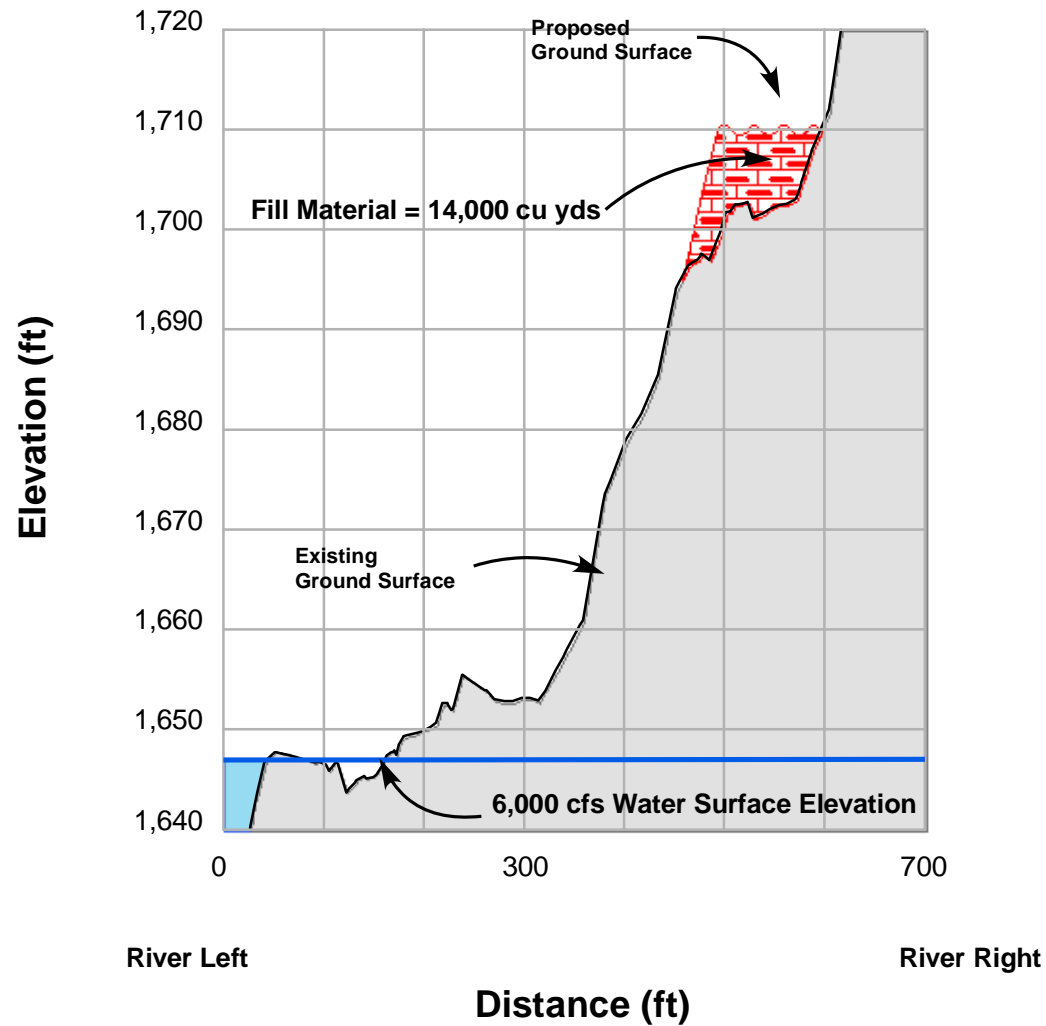
U-1 Cross Section



Note: Not to scale
Shown for comparative purposes

Figure 2.6a
U-1 Cross Section Profile of Proposed Rehabilitation Area

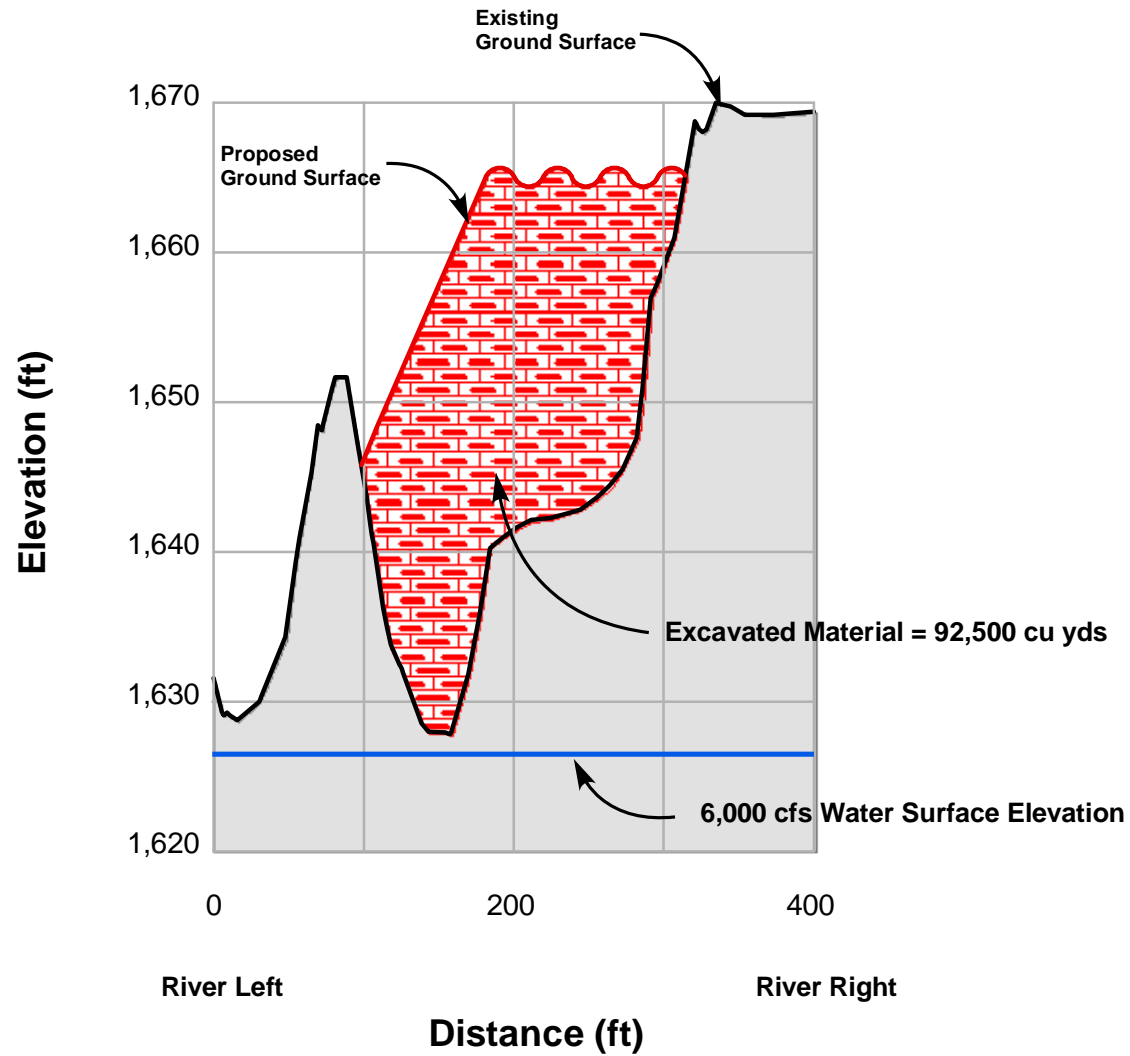
U-2 Cross Section



Note: Not to scale
Shown for comparative purposes

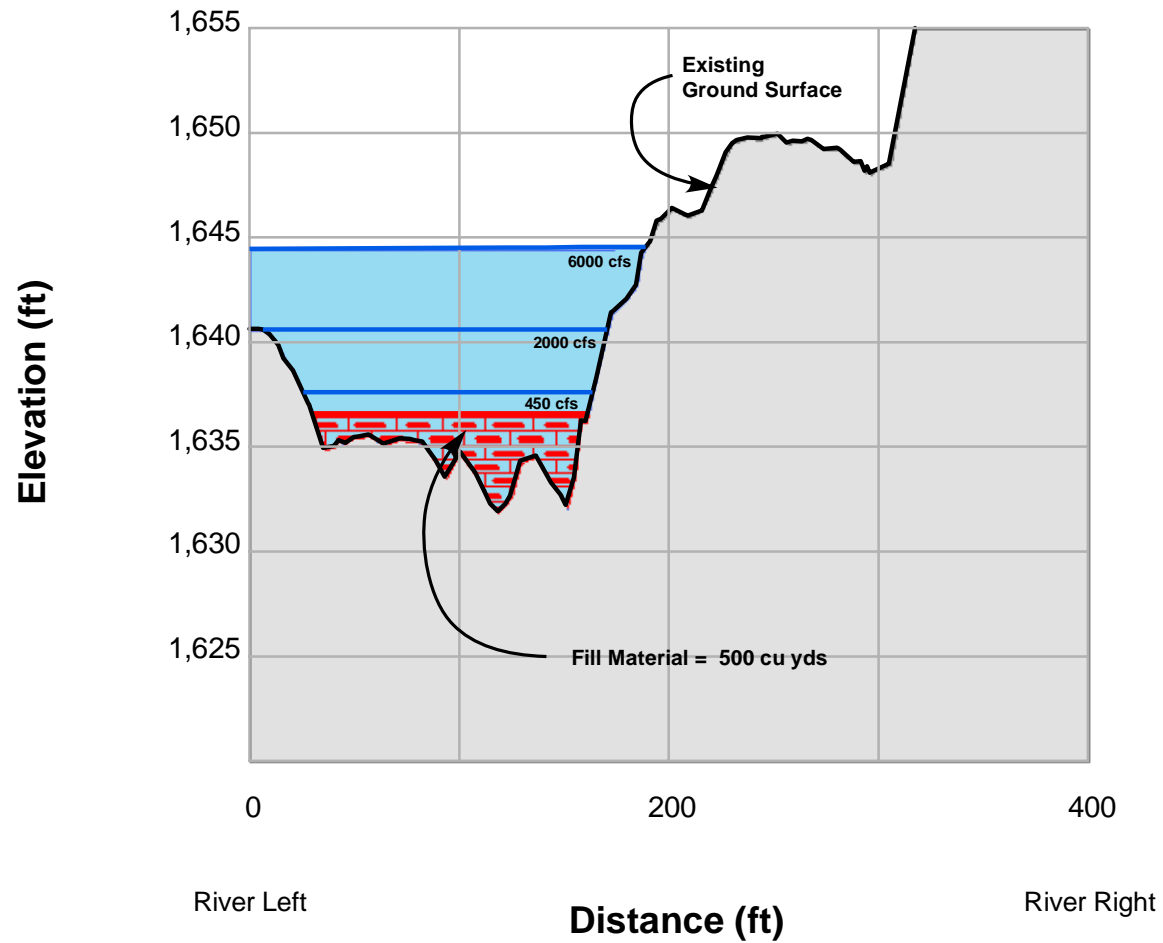
Figure 2.6b
U-2 Cross Section Profile of Proposed Rehabilitation Area

U-3 Cross Section



Note: Not to scale
Shown for comparative purposes

X-1 Cross Section Trinity River

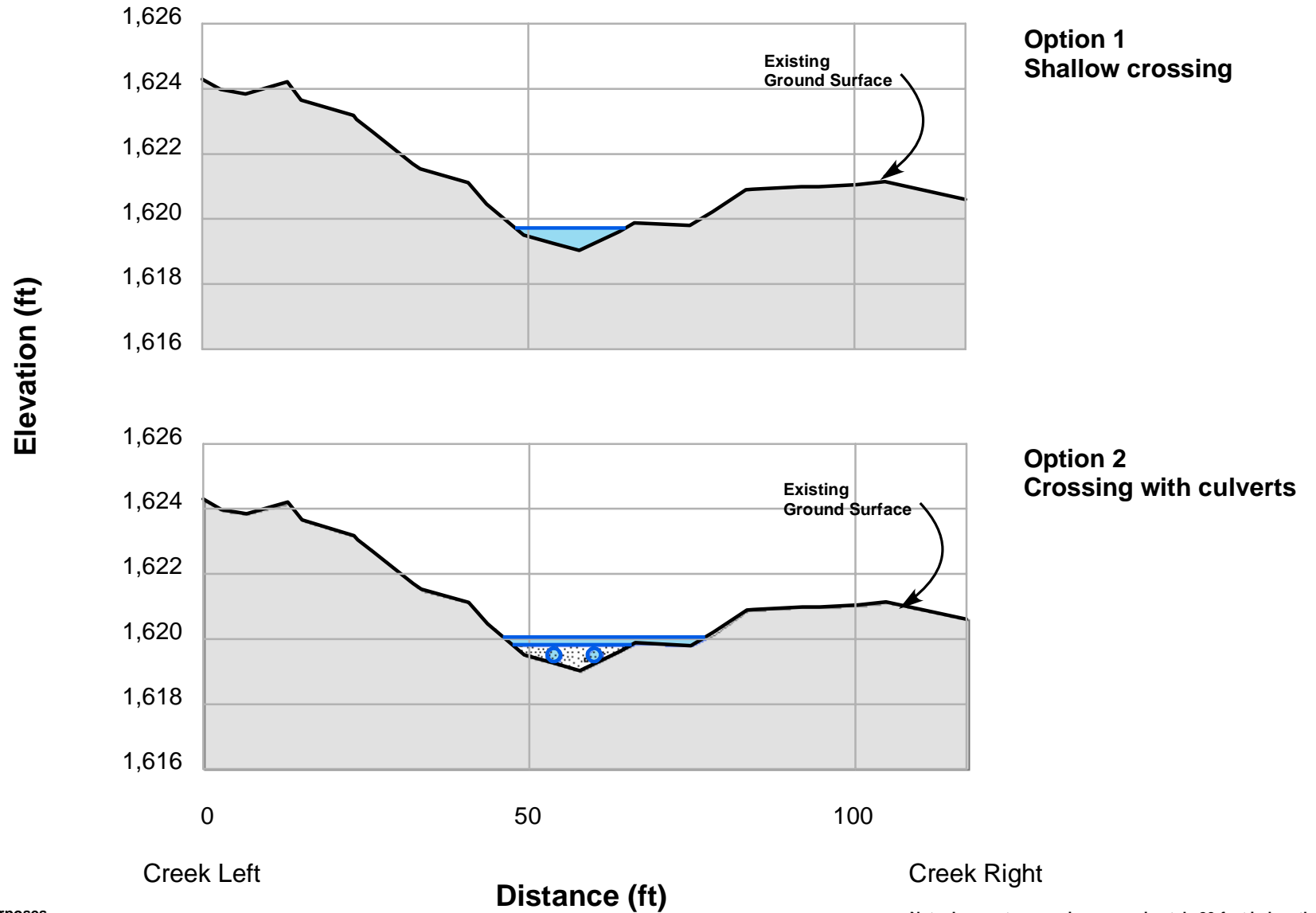


Note: Not to scale
Shown for comparative purposes

Note: Low water crossing (450 cfs) approximately 120 feet in length.

Figure 2.7a
X-1 Cross Section Profile of Proposed Trinity River Crossing

X-2 Cross Section Weaver Creek



Note: Not to scale
Shown for comparative purposes

Figure 2.7b
X-2 Cross Section Profile of Proposed Weaver Creek Crossing

Affected Environment and Environmental Consequences

3.1 Introduction

Chapter 3 describes the affected environment and the environmental consequences of implementing the alternatives described in Chapter 2. Issues discussed include land use; geology, fluvial geomorphology, and soils; water resources; water quality; fishery resources; vegetation, wildlife, and wetlands; recreation; socioeconomics, population, and housing; tribal trust; cultural resources; air quality; environmental justice; aesthetics; hazards and hazardous materials; noise; public services and utilities/energy; and transportation/traffic circulation.

Each section includes a discussion of the affected environment (California Environmental Quality Act [CEQA] existing conditions), environmental consequences (CEQA environmental impacts), methodology, significance criteria (if applicable), and mitigation measures. Some sections address issues that are required to satisfy federal law (e.g., National Environmental Policy Act [NEPA]), but are not required to comply with CEQA. Because CEQA generally does not require lead agencies to consider the purely economic or social effects of proposed projects, Sections 3.9 (Socioeconomics), 3.10 (Tribal Trust), and 3.13 (Environmental Justice) were not prepared to comply with CEQA. Individual sections in Chapter 3 are organized in the following manner.

3.1.1 AFFECTED ENVIRONMENT (CEQA EXISTING CONDITIONS)

The Affected Environment sections for each of the issues discussed describe the existing regional and local conditions using the most current information available. The affected environment establishes the context for each section of this chapter pursuant to 40 CFR Section 1508.27 (a). The information in these sections is used as the environmental baseline for analyzing the significance of potential effects of the Proposed Action and the significance of the effects of project alternatives with respect to each specific resource area (See CEQA Guidelines, Section 15125, subd. (a)).

3.1.2 ENVIRONMENTAL CONSEQUENCES (CEQA ENVIRONMENTAL IMPACTS)

As required by the CEQA Guidelines, the impacts of a proposed project (action) are defined as “a change in the existing physical conditions in the affected area as they exist at the time the notice of preparation is prepared” (Section 15126.2). For purposes of NEPA, the term “environmental consequences” is synonymous with the term “impacts.” The environmental consequences discussion addresses the intensity of the project as required by 40 CFR Section 1508.27 (b). The impacts of the project are identified and the level of significance of the impacts is determined in the following sections of this chapter.

The following subsections are also presented in the Environmental Consequences section for each issue area:

- **Methodology:** This subsection identifies the methods used to analyze impacts, as well as the key assumptions used in the analysis process. Sections that incorporate quantitative assessments reference complementary technical appendices, as appropriate. Key assumptions used in qualitative analyses are described for those sections that do not rely on quantitative tools.
- **Significance Criteria:** This subsection presents the criteria and thresholds used to identify potentially significant effects on the environment, in accordance with California Public Resources Code (PRC) Section 21082.2 and CEQA Guidelines Sections 15064 and 15065. “Thresholds” include guidance provided by the CEQA Guidelines, agency standards, legislative or regulatory requirements as applicable, and professional judgment. All impacts that do not exceed the stated significance criteria described for each section are assumed to be less than significant and are therefore not discussed in detail in the document (PRC Section 21100 and CEQA Guidelines Section 15128).
- **Summary of Impacts Table:** At the beginning of the Impacts and Mitigation Measures subsection is a table that identifies all the impacts evaluated for that particular environmental issue area (i.e., Land Use, Fishery Resources, etc.). Included in this summary table are the various levels of significance (i.e., No Impact, Less than Significant, Significant) for the alternatives associated with the proposed project, including the No-Action Alternative. To enhance readability, the tables provide additional columns that describe what the level of significance would be after mitigation is implemented.
- **Impacts:** At the end of each impact statement heading, the impact significance determination (i.e., No Impact, Less than Significant, Significant) is provided for each alternative evaluated. Following the impact statement, a detailed impact analysis is provided for each alternative that is fully evaluated in the EA/DEIR. In instances where the effects of one alternative are similar to another alternative, redundant impact analysis is not presented; rather a simple statement to the effect that the impacts of the two alternatives is provided. An example of the impact analysis structure is provided below:

Impact 3.2-1: Construction of the proposed project could temporarily disrupt existing land uses adjacent to the project site. *No Impact for the No-Action Alternative; Significant Impact for the Proposed Action, Alternative 1, and Alternative 2*

No-Action Alternative

Under the No-Action Alternative...

Proposed Action

Construction and maintenance of the Proposed Action...

Alternative 1

Land use impacts associated with Alternative 1 are similar to those of the Proposed Action...

Error! Main Document Only.*Alternative 2*

Land use impacts associated with Alternative 2 are similar to the those of the Proposed Action...

- **Mitigation:** Potentially feasible mitigation measures that would reduce significant impacts associated with each of the alternatives to less-than-significant levels are provided after each impact discussion. In those instances where no feasible mitigation can be identified, such impacts are identified as significant and unavoidable. An alphanumeric coding system is used to present each mitigation measure. For example, Mitigation Measure 1 would correspond to the first impact statement listed in the impact discussion. Following the mitigation measure(s) is a subheading entitled “Significance After Mitigation” that identifies the level of significance following implementation of the prescribed mitigation measure(s). In those instances where no mitigation measures were proposed because the impact was not significant, a “Not Applicable” statement follows this subheading. An example of the mitigation measures structure is provided below.

*Mitigation Measures**No-Action Alternative*

Since no significant impact was identified, no mitigation is required.

Significance After Mitigation: N/A.

Proposed Action

- **1a:** Reclamation shall clearly identify all ...

Alternative 1

- **1a:** Reclamation shall clearly identify all ...

Alternative 2

- **1a:** Reclamation shall clearly identify all ...

Significance After Mitigation: Less than Significant.

3.2 Land Use

This section addresses land use issues related to construction and operation of the Proposed Action and alternatives, including an assessment of project conformance with local and regional land use plans and policies. The following evaluation is based on a review of local land use plans and policies and field reconnaissance used to confirm existing land uses.

3.2.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

Regional Setting

Existing Land Uses

The Trinity River basin comprises the majority of Trinity County and the easternmost portion of Humboldt County. The terrain is predominantly mountainous and is forested with numerous lakes and rivers. It has little available farming area. Two scenic byways cross Trinity County, SR 299 and SR 3. The largest town in the region is Weaverville; the next largest towns are Hoopa, Hayfork, and Lewiston. In addition, most of the Hoopa Valley Indian Reservation is located within the basin. Land use within the Trinity River basin is largely influenced by sizable amounts of public, tribal, and private forest lands, much of which is used for timber production or other natural resource-related uses. Private land use adjacent to the Trinity River is generally limited to scattered residential and commercial development along SR 299, which is the primary travel corridor through Trinity County, connecting the Central Valley to the east with the coastal communities of Humboldt County.

Approximately three-fourths of the land in Trinity County, or about 1,543,066 acres of the county's total 2,052,980 acres, is under federal jurisdiction (Center for Economic Development 2001). The majority of federal lands are governed by the U.S. Forest Service (USFS), which owned 1,463,870 acres in 1998. Other major federal land holdings are managed by BLM (78,928 acres) and Reclamation (268 acres).

With a population totaling approximately 15,000, the Trinity River basin is very lightly populated. Residential, commercial, and industrial development tend to be concentrated on relatively flat areas near the Trinity River or its tributaries, as typified by the population centers of Weaverville, Hayfork, Junction City, Willow Creek, and Hoopa. Collectively, these communities house two-thirds of the basin's population, with the majority residing in Trinity County, which had a population of 13,050 in 2002.

The development potential of most of the land in the basin is restricted by topography, limited private land ownership, and Timber Production Zone zoning, which disallows residential uses and applies to most private land. Both Trinity County's General Plan and the Hoopa Valley Indian Tribe's planning policies steer development toward previously developed areas and discourage development on resource lands. Small communities such as Douglas City and Junction City are situated on level terrain adjacent to SR 299 and the Trinity River. Development associated with these communities has been primarily residential, typified by scattered single-family residences and mobile homes. Much of this residential development has encroached on the river's floodplain and the floodplains of some of its tributaries. Some mineral resource development (e.g., gold mining, commercial aggregate) also occurs within the river's floodplain.

Regional Planning

BLM's Redding Field Office manages public lands in and adjacent to the project boundary. Public lands are managed for multiple uses in conformance with the Redding Resource Management Plan (RMP) and Record of Decision (U.S. Bureau of Land Management 1993). The RMP for the Trinity River area consists of resource condition objectives, land-use allocations, and management actions, as described later in this section (see Relevant Plans and Policies).

The project is located in the Douglas City Community planning area (Trinity County 1987) (Figure 3.2-1). Trinity County has outlined land use categories and land use designations in the Land Use Element of the Trinity County General Plan (2001). Land use categories and designations are intended to be flexible and are not zoning districts; however, zoning districts must be consistent with land use designations. Land use categories relevant to lands in and adjacent to the site boundary consist of Community Development and Natural Resource. These broad general categories were developed to distinguish developed areas from resource lands. Table 3.2-1 describes these categories and their associated land-use designations.

TABLE 3.2-1

LAND USE CATEGORIES AND DEFINITIONS{ TC "Table 3.2-1 Land Use Categories and Definitions" \f B \l "1" }

Category	Definition
Community Development (CD)	Those areas in Trinity County that can be described as viable communities. Special efforts are made to positively encourage new development to locate in CD areas, as services are readily available and can be provided more cheaply and conveniently. Typically, CD areas incorporate a number of varied land uses, all of which are critical to the economic well-being and general quality of life for its residents. Land-Use Designations applicable to CD areas include Community Residential; Commercial; Industrial; and Community Expansion.
Natural Resource (NR)	Recreational developments such as campgrounds, recreational vehicle parks, marinas and boat launching ramps, picnic area, resorts, and small businesses serving recreationists are permitted in NR areas to the extent that they do not damage sensitive environmental resources or commercial values. Land-Use Designations applicable to this category include Open Space, Resource Land, Agriculture, and Rural Residential. Resorts that are otherwise consistent with Open Space, Resource, Agriculture, or Rural Residential will be allowed in this designation. However, the theme of any new development in NR areas must emphasize and enhance the natural resource area in which they are located.

Source: Trinity County General Plan (2001)

Local Setting

The project site is located along an approximately 2.73-mile stretch of mainstem Trinity River immediately east of the community of Douglas City, Trinity County, California. Douglas City is located on SR 299 approximately 6 miles south of Weaverville. Weaverville is the largest community in Trinity County, population 3,554 in 2000 (U.S. Census Bureau 2005) and is 45 miles west of Redding in Shasta County. Douglas City has an estimated population of 714. Residential development also occurs on the left side of the river, and the Indian Creek Lodge and Motel is located within the project boundary.



Source: Trinity River Flow Evaluation Report, 1999

Indian Creek Rehabilitation Site: Trinity River Mile 93.7 to 96.5



Figure 3.2-1.
Planning Area Boundaries

Existing Land Uses

Historically, gold mining provided the impetus for exploration and development of the various natural resources in the project's general vicinity. While mineral production continues along the Trinity River and its tributaries, the local economy has shifted away from the mining and forest products industries to a recreation and tourism base. Although many of the lands that are adjacent to and in the general vicinity of the project boundary are privately owned, the river is a public waterway and is commonly used for rafting, kayaking, tubing, and fishing.

Local Planning

Trinity County General Plan

Lands within the project boundary fall under the County's land use category of Community Development and Natural Resource. As defined in Table 3.2-1, land use categories, including Community Development and Natural Resource lands, are further divided into sub-categories. Sub-categories relevant to these designations within the project boundary include Commercial, Open Space, and Rural Residential. Table 3.2-2 describes these Natural Resource land use sub-category designations.

TABLE 3.2-2

LAND USE SUB-CATEGORY DESIGNATIONS RELEVANT TO LAND AT THE PROJECT SITE{ TC
"Table 3.2-2 Land Use Sub-category Designations" \f B \l "1" }

Designation	Definition
Commercial	Commercial areas are designated within general communities and are intended to indicate the desirable location of various commercial developments. Commercial developments may include community business district, highway commercial and recreation commercial.
Open Space	The Open Spaces designation indicates "natural areas" to be protected for scenic, wildlife habitat, and watershed values. These are generally areas of important natural processes and may include unstable areas, floodplains, and other natural hazard areas.
Rural Residential	The Rural Residential designation describes areas of rural residential development. Minimal county services are provided and, in general, are undesirable. This designation also provides for small home businesses and small-scale agriculture, subject to controls to prevent nuisances.

Source: Trinity County General Plan (2001)

Trinity County Zoning

Trinity County's land use designation sub-categories are further defined by specific land use zones or districts. Zoning districts are used in part by the County to provide a definite plan of development by guiding, controlling, and regulating future growth. Table 3.2-3 describes land use zoning district designations applicable to the project.

Table 3.2-4 provides a cross-reference of allowable land uses within each zoning district described in Table 3.2-3. The minimum size required for inclusion of a parcel in a zoning district is also described in the table.

TABLE 3.2-3

LAND USE ZONING DISTRICTS OF THE PROJECT SITE { TC "Table 3.2-3 Land Use Zoning Districts of the Project Site" \f B \l "1" }

Zones	Description
Open Space (OS)	The Open Space Zoning District is intended to protect significant or critical wildlife habitat areas or areas which should not be developed due to public health and safety reasons.
Commercial	Commercial areas are designated within general communities and are intended to indicate the desirable location of various commercial developments. Commercial development may include community business district, highway commercial and recreation commercial.
Rural Residential - 5 acres (RR-5)	This zoning allows for limited residential development in outlying areas of the County where minimal impacts are desirable and the overall character of the landscape, as well as potential for open space, recreation, or resource production is to be preserved. This designation has a minimum parcel size of 5 acres.
Highway Commercial (HC)	This designation is intended for highway-frontage, tourist-oriented business development and for more general commercial uses, such as wholesale storage, lumber yard, bulk plants, etc., which require more space than is available in Central Business District.
Rural Residential - 2.5 acres (RR-2.5)	This zoning allows for limited residential development in outlying areas of the County where minimal impacts are desirable and the overall character of the landscape, as well as potential for open space, recreation, or resource production is to be preserved. This designation has a minimum parcel size of 2.5 acres.
Flood Hazard (FH)	Established by the County Floodplain Ordinance (315-698) as an overlay to identify flood hazard areas within Trinity County. The Flood Hazard Zoning District includes areas designated as (1) Regulatory Floodway or Zone AE on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM); (2) areas identified as Zone A along the Trinity River or Coffee Creek; (3) along streams in accordance with the Trinity County Subdivision Ordinance; or (4) areas identified as 100-year floodplain in a use permit condition or approved flood study.
Scenic Conservation (SC)	Scenic Conservation is an overlay zone used to identify those areas of unusual scenic qualities which are unique to Trinity County and to provide the necessary degree of control on the placement of structures, development of roads, and vegetative management within those areas. Within the project boundary, areas lying within the 100-year floodplain of the Trinity River are designated as SC.

Source: Trinity County General Plan (2001)

TABLE 3.2-4

LAND USE ZONING DISTRICTS AND LAND USE DESIGNATIONS WITHIN THE PROJECT BOUNDARY{ TC "Table 3.2-4 Land Use Zoning Districts and Land Use Designations" \f B \l "1" }

Land Use Zoning Districts	Land Use Designations					Land Use Zoning District Minimum Parcel Size (acres)
	Community Development	Commercial	Natural Resource	Open Space	Rural Residential	
Commercial	x	x				0.2
Open space			x	x	x	Not specified
Highway Commercial	x	x				0.2

TABLE 3.2-4

LAND USE ZONING DISTRICTS AND LAND USE DESIGNATIONS WITHIN THE PROJECT BOUNDARY{ TC
"Table 3.2-4 Land Use Zoning Districts and Land Use Designations" \f B \ "1" }

Land Use Zoning Districts	Land Use Designations					Land Use Zoning District Minimum Parcel Size (acres)
	Community Development	Commercial	Natural Resource	Open Space	Rural Residential	
Rural Residential – 5 (1 home per 5 acres)	x		x	x	x	5
Rural Residential - 2.5 (1 home per 2.5 acres)	x		x	x	x	2.5
Flood hazard			x	x		Not specified
Scenic conservation			x	x		Not specified
Land Use Designation Minimum Parcel Size (acres)	0.001	0.002	Not specified	Not specified	1	

Source: Trinity County General Plan (2001)

Douglas City Community Plan

The Douglas City Community Plan (Trinity County 1987) covers approximately 35 square miles (22,400 acres) centered around the Trinity River from Grass Valley Creek to slightly downstream from Steiner Flat.

Land Uses Associated with the Project Site

The site consists primarily of rural residential parcels, some of which have been developed as homesites. The BLM owns a fairly large portion of the site at both the eastern and western ends of the project boundary. The CDFG also owns a portion of the site, in the central part of the project boundary.

Land use zoning within the project boundary consists of rural residential, commercial and open space, and portions of the site within the 100-year floodplain have been designated as “Zone A1” Flood Hazard Area by the Federal Emergency Management Agency (FEMA) (see Figure 3.4-3 in Section 3.4, Water Resources). In addition, all areas within the 100-year floodplain of the Trinity River have been designated by Trinity County as Scenic Conservation Zones.

Proposed Land Uses

In general, all parcels within the project boundary have been subdivided to the fullest extent possible under existing zoning designations; therefore, future rural residential development on the uplands, above the river’s floodplain, is unlikely. Future development is further restricted by the proximity of parcels to the Trinity River; many of these parcels are currently zoned Flood Hazard and Open Space. Proposed project activities would not result in any changes to current land uses or future proposed land uses.

¹ An area inundated by 100-year flooding, for which no base flood elevation (BFE) has been determined.

3.2.2 REGULATORY FRAMEWORK

Relevant Plans and Policies

Bureau of Land Management Redding Resource Management Plan (RMP) and Record of Decision (ROD) (1993)

The BLM RMP for the Trinity River area includes resource condition objectives, land-use allocations, and management actions. Resource condition objectives are the goals established for the decision area and are listed in descending order of priority. Land-use allocations prescribe general management categories (e.g., visual resources and recreation opportunity classes), specific limitations to full resource use (e.g., leasable mineral restrictions), or formal designations (e.g., Area of Critical Environmental Concern, wild and scenic river corridor) that are needed to meet the resource condition objectives and/or to comply with federal law. Management actions are implementation measures that ensure that the resource condition objectives are met and that alert the public and BLM to specific follow-up actions associated with specific land-use management alternatives.

Resource Condition Objectives

1. Enhance recreation opportunities related to use of the Trinity River, including mineral collection.
2. Maintain scenic quality along the river corridor.
3. Protect and enhance the anadromous fisheries of the Trinity River.
4. Interpret and protect key cultural and natural resources for the public.

Land Use Allocations

1. Designate [public lands in the management area] as the corridor for this “Recreational” component of the National Wild and Scenic Rivers System.
2. Manage all public lands as Visual Resource Management² (VRM) Class II.
3. Manage all public lands within the corridor as Roaded Natural or Semi-Primitive Motorized.
4. Withdraw specific cultural resources from mineral entry. Withdraw anadromous fisheries habitat improvements from mineral entry.
5. Offer mineral material disposals only to enhance riparian vegetation or anadromous fisheries habitat, or when not in conflict with the long-term protection of natural values.

Management Actions

- A) Modify the existing Trinity River Recreation Area Management Plan (U.S. Bureau of Land Management 1983) to reflect the designated corridor of the Trinity River (i.e., a “Recreational” component of the National Wild and Scenic Rivers System). Continue implementation of recreational developments and monitoring prescribed in the existing management plan.

² A two-stage system (inventory and analysis) used by the BLM to minimize the visual impacts of surface-disturbing activities to scenic public lands and to maintain scenic values for the future.

Project Consistency with the BLM Resource Management Plan

Table 3.2-5 shows the consistency of the project action(s) with the BLM Redding RMP and ROD (1993).

TABLE 3.2-5

CONSISTENCY OF PROJECT ACTION(S) WITHIN THE BUREAU OF LAND MANAGEMENT'S REDDING RESOURCE MANAGEMENT PLAN AND THE 1993 RECORD OF DECISION{ TC "Table 3.2-5

Consistency of Project Action(s) within the Bureau of Land management's Redding Resource Management Plan and the 1993 Record of Decision" f B \ "1" }

Objectives	Assessment of Consistency
1. Enhance recreation opportunities related to use of the Trinity River including mineral collection.	Project action(s) will protect existing recreation opportunities along the Trinity River.
2. Maintain scenic quality along the river corridor.	Project action(s) will not add any new, visually detracting features to the river corridor.
3. Protect and enhance the anadromous fisheries of the Trinity River.	Project action(s) will protect and enhance the anadromous fisheries of the Trinity River (see Section 3.6, Fishery Resources).
4. Interpret and protect key cultural and natural resources for the public.	Project action(s) will protect existing cultural and natural resources (see Section 3.7, Vegetation, Wildlife, and Wetlands; and Section 3.11, Cultural Resources).
5. Maintain the riparian habitat in Class I or Class II condition.	The overall goal of the project is to restore the quality and quantity of the Trinity River's fish habitat. Riparian habitat removed by the project action(s) will be replaced with a more diverse and historic assemblage of native plants (see Section 3.7 and Appendix E, Wild & Scenic River Act Section 7 Determination).

Trinity County General Plan Goals and Objectives

The Trinity County General Plan (2001) contains goals and policies designed to guide the future physical development of the county based on current conditions. The General Plan contains all the state-required elements including community development and design, transportation, natural resources, health and safety, noise, housing, recreation, economic development, public facilities and services, and air quality. The following goals and policies relative to land use issues associated with the proposed project action area were taken from the applicable elements of the County's General Plan and the Douglas City Community Plan (1987).

County-Wide Goals and Objectives

Cultural

County-wide goals and objectives would retain the rural character of Trinity County

- by encouraging uses that fit with the land;
- by considering the "rights" of the individual when making decisions as well as the "rights" of the community; and
- by seeking information and cooperation from state and federal agencies within Trinity County when considering projects.

Environmental

County-wide goals and objectives would strive to conserve those resources of the County that are important to its character and economic well-being

- by assuring that developments occurring on these lands are compatible with the resources;
- by strongly supporting the County as “lead agency” or as an integral participant in any state or federal project within the County so that all agencies are made aware of local desires and all plans are coordinated;
- by utilizing a sound resource-related planning process in decision-making; and
- by protecting not only rare and endangered species, but also required habitat for more plentiful species.

Land Use Designation

Land Use Designations are broad general descriptions of the types of land use that may occur in a specific area. Three general designations have been identified by the County: Community Development; Village; and Natural Resources. Although these designations can be further specified, with the exception of lands included in the “Village” designation, the general objectives of land use designations are as follows:

- In areas designated as Community Development, a specific development plan should be formulated that provides a comprehensive breakdown of factors such as allowable housing densities and housing types (e.g., single-family residential; multi-family residential; mobile home).
- The Village land use designation is intended to recognize and provide guidelines for those areas that can best be described as a small group of residences and/or commercial enterprises, but that do not support the wide variety of land uses that define a community. The designation of lands as a “Village” is often a precursor to the area becoming a community.
- Natural Resource lands can allow for some degree of development, such as campgrounds, resorts, and rural residential, but any new development in these areas must emphasize and enhance the Natural Resource areas in which they are located.

Douglas City Community Plan Goals and Objectives

The Douglas City Community Plan recognizes six general land use categories: Village, Commercial, Open Space, Resource Land, Residential, and Public Facilities. Land Use Goals identified in the plan and applicable to this project include:

Goal: To encourage the retention and utilization of resource land for timber production, agricultural uses, and mineral extraction.

- Encourage mineral extraction activities, especially gravel extraction uses within the Trinity River.

Project Consistency with the Trinity County General Plan and Surrounding Community Plans

The goals and objectives described in Chapter 1 are generally compatible with the applicable General Plan goals and policies summarized above. The overall goal of the Proposed Action is to rehabilitate the site so that it functions in a manner that is closer to historic conditions (i.e., pre-Lewiston Dam). Although there would be some mechanical vegetation removal within the Trinity River floodplain (which is a Scenic Conservation Overlay Zone), all project activities would include either passive or active measures to restore native vegetation. There will be no long-term effects to existing land uses as a result of implementing the proposed action or alternatives.

3.2.3 ENVIRONMENTAL CONSEQUENCES/IMPACTS AND MITIGATION MEASURES

Methodology

The methodology used for the land use impact analysis involved a comparison and assessment of the proposed action and alternatives to relevant plans and policies, review of the General Plan and Douglas City Community Plan, and zoning in relation to surrounding land uses and site features, and communication with County staff. The analysis was conducted through literature review and site visits.

Significance Criteria

The following significance criteria were developed based on guidance provided by CEQA Guideline. Impacts to land uses would be significant if they would:

- Result in land uses that are incompatible with existing and planned land uses adjacent to actions described as part of the project;
- Conflict with any applicable land use plan, policy, ordinance, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect;
- Disrupt or divide the physical arrangement of an established community;
- Result in substantial nuisance effects on sensitive land uses that would disrupt use over an extended time period; or
- Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Impacts and Mitigation Measures

Table 3.2-6 summarizes land use impacts that could result from implementation of the project.

TABLE 3.2-6

SUMMARY OF POTENTIAL LAND USE IMPACTS FOR THE NO-ACTION ALTERNATIVE, THE PROPOSED ACTION, ALTERNATIVE 1, AND ALTERNATIVE 2 { TC "Table 3.2-6 Summary of Potential Land Use Impacts" \f B \l "1" }

No-Action Alternative	Proposed Action	Alternative 1	Alternative 2	Proposed Action with Mitigation	Alternative 1 with Mitigation	Alternative 2 with Mitigation
Impact 3.2-1. Implementation of the project could disrupt existing land uses adjacent to the project site.						
NI	LS	LS	LS	N/A ¹	N/A ¹	N/A ¹
Impact 3.2-2. Implementation of the project may be inconsistent with the goals, policies, and objectives of the Trinity County General Plan, as well as local community plans, policies, and ordinances.						
NI	LS	LS	LS	N/A ¹	N/A ¹	N/A ¹
Impact 3.2-3. Implementation of the project may affect the availability of a locally important mineral resource recovery site.						
NI	LS	LS	LS	N/A ¹	N/A ¹	N/A ¹

Notes:

LS = Less than Significant; NI = No Impact; B = Beneficial; N/A = Not Applicable

¹Because this potential impact is less than significant, no mitigation is required.

Impact 3.2-1: Implementation of the project could disrupt existing land uses adjacent to the project site.
No Impact for the No-Action Alternative; Less than Significant Impact for the Proposed Action, Alternative 1, and Alternative 2

No-Action Alternative

Under the No-Action Alternative, no restoration activities will occur. There would be no temporary disruption to existing land uses within or adjacent to the site.

Proposed Action

The project site is composed of rural residential parcels with interspersions of federal and state lands and designated open space. All areas within the 100-year floodplain of the Trinity River have been designated by Trinity County as Scenic Conservation Zones, and any development has occurred on uplands, outside of the areas of direct impact associated with the project. Currently, there are no active mining operations or Timber Harvest Zones in or adjacent to the project boundary. No agricultural uses exist within the project boundary, nor are there any lands designated as Prime Farmland, Unique Farmland, or Farmlands of Statewide Importance. Access to adjacent residences will be maintained at all times during the project construction, and any temporary disruption of public overland river access would be localized and less than significant.

Construction of the project could produce minor nuisance effects (i.e., noise, air quality, and aesthetics effects) at some nearby residences; however, such impacts would be temporary and would not significantly affect existing land uses. Project impacts associated with noise, air quality, and aesthetics are discussed in Section 3.16, Section 3.12 and Section 3.14, respectively.

The Proposed Action is a rehabilitation project that would not introduce a new land use within the project boundary; therefore, no long-term land use impacts will occur as a result of project implementation.

Alternative 1 and Alternative 2

In general, long-term and temporary land use impacts that may be produced by the project under Alternatives 1 and 2 would be similar to those under the Proposed Action, although the extent of such impacts would be less under Alternative 2 than under the Proposed Action due to proposed smaller area of disturbance. Similar to the Proposed Action, there will be no long-term land use impacts under Alternative 1.

Mitigation Measures

No-Action Alternative, Proposed Action, and Alternative 1

Since no significant impact was identified, no mitigation is required.

Significance After Mitigation: N/A.

Impact 3.2-2 Implementation of the project may be inconsistent with the goals, policies, and objectives of the Trinity County General Plan, as well as local community plans, policies, and ordinances. ***No Impact for the No-Action Alternative; Less-than-Significant Impact for the Proposed Action, Alternative 1, and Alternative 2***

No-Action Alternative

Under the No-Action Alternative, the proposed rehabilitation activities would not occur. Therefore, there would be no inconsistency with the goals, policies, and objectives of the Trinity River General Plan or other local community plans, policies, or ordinances.

Proposed Action, Alternative 1, and Alternative 2

Implementation of restoration activities proposed under the Proposed Action, Alternative 1, and Alternative 2 would not introduce land uses that are incompatible with existing or proposed land uses, nor would any action conflict with any land use plan, policy, or ordinance.

In an amendment to the Trinity County Code (Ordinance No. 315-698), the County has adopted a Floodplain Management Ordinance that promotes public health, safety, and general welfare, protection of fish and wildlife resources, and minimization of public and private losses due to flood conditions through a series of specific provisions. Land development standards for development permitted by the County within designated flood hazard zoning districts are summarized in Table 3.2-7. This table also provides an assessment of the consistency of the Proposed Action and Alternative 1 with these development standards.

TABLE 3.2-7

CONSISTENCY OF THE PROPOSED ACTION, ALTERNATIVE 1, AND ALTERNATIVE 2 WITH APPLICABLE FLOOD HAZARD OVERLAY ZONING DISTRICT LAND DEVELOPMENT STANDARDS{ TC "Table 3.2-7

Consistency of The Proposed Action, Alternative 1, and Alternative 2 with applicable Flood Hazard Overlay Zoning District Land Development Standards" \f B \l "1" }

Objectives	Assessment of Consistency		
	Proposed Action	Alternative 1	Alternative 2
Construction Materials and Methods			
All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.	The project does not involve the placement of any permanent new construction or improvement to any existing structures within the floodplain (see Section 3.4, Water Resources). To improve river functions, natural substrates (i.e., cobbles, gravels, and sands) will be redistributed within the project boundary.	Same as Proposed Action	Same as Proposed Action
Fill and Other Floodplain Encroachments			
All fill and other encroachments shall be certified by a registered professional engineer or architect not to increase the Base Flood Elevation more than 12 inches. Such a certification shall be provided to the Floodplain Administrator.	Implementation of the Proposed Action involves removal of alluvial (fill) materials from the floodplain and will not result in a rise in the base flood elevation.	Same as Proposed Action	Same as Proposed Action

As noted in Table 3.2-7, the Proposed Action, Alternative 1, and Alternative 2 would be consistent with the County's development standards for lands lying within the Flood Hazard Overlay zoning district. Specific to human health and safety, a Safety Element (January 2002) has been prepared to accompany the County's General Plan. Although it may overlap with other elements of the County's General Plan (e.g., Land Use, Conservation, Open Space), the Safety Element is designed to identify acceptable risk and determine the level of mitigation that is necessary. Because the project boundary falls within the Douglas City Community Planning Area, directives set forth in the Douglas City Community Plan (1987) are also applicable to the project. Table 3.2-8 summarizes the consistency of the safety elements of both the county's General Plan and the Douglas City Community Plan with the Proposed Action, Alternative 1, and Alternative 2 being considered at the project site.

TABLE 3.2-8

CONSISTENCY OF THE PROPOSED ACTION, ALTERNATIVE 1, AND ALTERNATIVE 2 WITH THE SAFETY ELEMENTS OF THE TRINITY COUNTY GENERAL PLAN AND THE DOUGLAS CITY COMMUNITY PLAN IN FLOOD HAZARD OVERLAY ZONING DISTRICTS{ TC "Table 3.2-8 Consistency of the Proposed Action, Alternative 1, and Alternative 2 with the Safety Elements of The Trinity County General Plan and The Douglas City Community Plan in Flood Hazard Overlay Zoning Districts" \f B \l "1" }

Objectives	Assessment of Consistency
Trinity County General Plan Safety Element	
1. Reduce the loss of life and property by establishing development standards for areas subject to flooding: <ul style="list-style-type: none"> a. Require all development to meet federal, state, and local regulations for floodplain management protection; including the encouragement of upgrading existing structures to meet adopted standards. b. Require all development to meet the development standards of the National Flood Insurance Act regulations in Title 44 CFR Section 60.3, as implemented through the County Zoning Ordinance section 29.4 c. Prohibit the creation of new parcels that have no building sites outside of the 100-year floodplain, except for the creation of open space parcels. d. The County's Disaster Response Plan should include procedures to protect the public from flooding hazards. e. Maintain or return to Open Space lands subject to flooding. 	The Proposed Action, Alternative 1, and Alternative 2 meet those objectives and policies that are applicable.
2. Reduce the potential for the loss of life and property from dam failure inundation	The Proposed Project, Alternative 1, and Alternative 2 are designed to ensure continued protection of human life and property.
Douglas City Community Plan - Hazards	
1. Insure that future developments do not create flood hazards either to themselves or to downstream developments.	The Proposed Project, Alternative 1, and Alternative 2 are designed to ensure continued protection of downstream property.
2. Incorporate Flood Hazard Zoning on those areas of the Plan subject to flooding.	Not applicable to the Proposed Project, Alternative 1, and Alternative 2.
3. Review the Poker Bar area for probable areas susceptible to flooding and leaching of effluent into the Trinity River.	Not applicable to the Proposed Project, Alternative 1, and Alternative 2.

As noted in Table 3.2-8, the Proposed Action, Alternative 1, and Alternative 2 would be consistent with Trinity County's General Plan and the Douglas City Community Plan.

Rehabilitation activities associated with the Proposed Action, Alternative 1, and Alternative 2 would not have any effect on future development within Douglas City. Therefore, the project would be consistent with the recommended goals and objectives for land use and safety as defined in the Trinity County General Plan and the Douglas City Community Plan.

Mitigation Measures

No-Action Alternative, Proposed Action, Alternative 1, and Alternative 2

Since no significant impact was identified, no mitigation is required.

Significance After Mitigation: N/A

Impact 3.2-3: Implementation of the project may affect the availability of a locally important mineral resource recovery site. ***No Impact for the No-Action Alternative; Less-than-Significant Impact for the Proposed Action, Alternative 1 and Alternative 2***

No-Action Alternative

Under the No-Action Alternative, no rehabilitation activities would be implemented. Therefore, there would be no impact on locally important mineral resource recovery sites.

Proposed Action, Alternative 1, and Alternative 2

There are no locally important mineral recovery sites located in the Project Action area or within 5 river miles of the project boundary; therefore, neither the Proposed Action, Alternative 1, nor would Alternative 2 have a significant effect on mineral extraction activities.

Mitigation Measures

No-Action Alternative, Proposed Action, Alternative 1, and Alternative 2

Since no significant impacts were identified for these alternatives, no mitigation is required.

Significance After Mitigation: N/A